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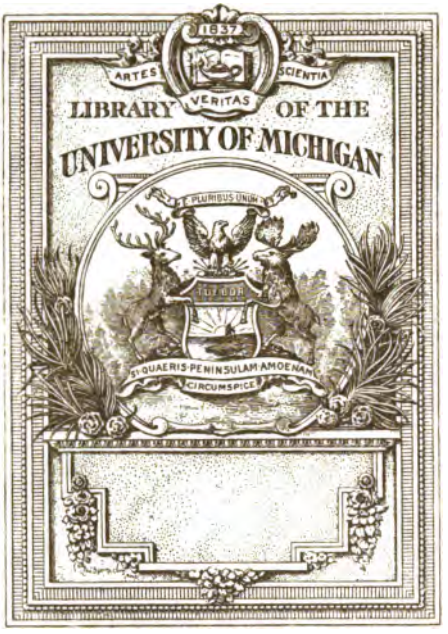
REPORT
OF
METROPOLITAN PARK COMMISSION

1915



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REPORT

OF THE

BOARD OF METROPOLITAN PARK COMMISSIONERS.

DECEMBER, 1915.

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Metropolitan Park Commission 7-8-16 g

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The Commonwealth of Massachusetts.

REPORT.

The Metropolitan Park Commission presents herewith its twenty-third annual report.

The past year has been notable in acquirements, in construction and in improvement of facilities for administration and public use.

The principal acquirements are as follows: the land for the Old Colony Parkway from Columbia Road to Savin Hill, Harrison Square, Neponset River at the Neponset River Bridge, all in Boston, and thence from Neponset River to the parkway connecting with Quincy Shore Driveway, a distance of 3 miles and an area of 56 acres. For this remarkable acquirement, located within a portion of Boston and Quincy, which for the most part is closely built over, about forty buildings of an inferior sort have been taken, and the resulting claims have already been well advanced towards settlement. Land has been acquired by gift of the town of Arlington, acting under special authority of the Legislature, for a driveway from Mystic River Parkway at Medford Street, following and including the southerly shore of Mystic Lake, through park lands of the town of Arlington to Mystic Street on a line which will connect with a highway being built by the town through the central part of the town to Lowell Street, a main highway to Lexington and Lowell. The city of Medford has transferred to the care and control of this Board a great tract of marshes bordering on Mystic River, extending from the lands previously acquired by the Board near Cradock Bridge in the center of the city to Middlesex Fells and Revere Beach Parkway, a distance of 2.04 miles and an area of upwards of 206 acres. Other small pieces of land have been acquired for the improvement of Furnace Brook Parkway in

Quincy, for service sheds adjoining Charles River Embankment in Boston, for Dedham Parkway in Dedham, for enough of the extension of Winthrop Parkway in Revere to warrant the belief that during the coming year most of the other land required for the extension of Short Beach in Winthrop will be acquired. By special act of the Legislature (chapter 270 of the General Acts of 1915) the land acquired by this Board in 1894 for the portion of West Roxbury Parkway from Washington Street, Hyde Park, to Weld Street, transferred to the city of Boston for care and control at the time of its acquirement, has been retransferred to this Board. These acquirements assure the future of parkways which will be of great convenience and beauty, and for the most part make connections between previously detached parkways. On the other hand, the city of Cambridge has neglected to concur in a taking of land for an extension of Fresh Pond Parkway from its present terminus at Huron Avenue to the holdings of its Water Board around Fresh Pond as contemplated by chapter 699 of the Acts of 1912, which authorized expenditure for construction of this extension.

The most notable construction work has been that in the continuation of work authorized by chapter 699 of the Acts of 1912, and that under a few special acts authorizing expenditures to be charged to the maintenance funds, and that under special acts for work to be done at once with a view to relieving temporary conditions of unemployment.

Under chapter 699 of the Acts of 1912 the driveway along Mystic River has been completed from Main Street near Cradock Bridge to the hill beyond Mystic Avenue, forming an excellent temporary connection with Middlesex Fells Parkway; and an extension of Furnace Brook Parkway from Quincy Shore Reservation across and along Black's Creek to Hancock Street in the center of Quincy has been well advanced toward completion.

Under special acts and appropriations Aberjona River in Winchester is being cleaned and deepened, and Charles River between the bleachery and Moody Street is being dredged. A driveway on the south side of Charles River from Brooks Street near Faneuil station to Charlesbank Road in Newton has

been nearly completed. Anderson Bridge has been completed and turned over to Boston and Cambridge to maintain. New service sheds have been completed in Middlesex Fells Parkway. Bulkheads of cement have been completed at Revere Beach and Nantasket to replace wooden bulkheads destroyed by storm, and a stone bulkhead wall has been built at Winthrop Highlands. The bath-house at Nahant has been enlarged. Construction of North Beacon Street Bridge and of a new boiler house at Revere Beach Bath-house has been begun. Plans have been prepared for construction of a bulkhead wall to protect Great Head in Winthrop, as authorized by chapter 683 of the Acts of 1914, but no work has been possible upon this project because the town authorities are of the opinion that it is advisable that the authority of the act should be enlarged to provide for construction of a wall and filling behind it in form to provide for extension of the Winthrop Shore wall and driveway rather than for the mere protecting bulkhead authorized by the act.

Plans have been prepared for construction during the coming year of a concrete bridge over Charles River at the end of Commonwealth Avenue between Newton and Weston; for a concrete bridge over Neponset River to replace the wooden bridge between Hancock Street, Quincy, and Neponset Avenue, Boston; and for construction of a portion of Alewife Brook Parkway between Powder House Boulevard and Mystic Avenue.

Many minor improvements have been made by repairs at various reservations and parkways, the most notable of which have resulted in the opening of an automobile road through the easterly portion of Blue Hills and an automobile road from South Street to Marble Street, Stoneham, in Middlesex Fells.

Reports have been prepared, as required by special statutes, for consideration of the Legislature of 1916 regarding the building of Ocean Avenue in Revere, on the extension of Woburn Parkway, the construction of West Roxbury Parkway and the acquirement of Boston Rock in Melrose. These special reports are included in the Appendix to this report. Details of all the above matters are contained in the accompanying reports of the Secretary and the Engineer, and some of them are more fully discussed farther on in this report.

The Legislature of 1915 gave immediate consideration to recommendations of the Governor in regard to business conditions which seemed to indicate that a period of unusual unemployment for labor was likely to cause great hardship during the winter. As a method of relieving this condition this Board was authorized to expend at once $50,000 on the reservations and $50,000 upon the parkways, and the State civil service law was suspended in a measure by direction that in such work employments should be made as far as possible from the local civil service lists of near-by cities and towns. These acts are generally referred to as emergency acts, chapters 4 and 5 of the Acts of 1916. Work was begun almost immediately at many points. Laborers were employed for two weeks at a time and assigned as far as possible to work which they were able to do, and upwards of 1,000 men were employed at some thirty-eight different localities. Preference was given as far as possible to those who had others dependent upon them, and by the time the unemployment ceased, very few calls for employment were being received. All but a few hundred dollars of the appropriation were expended, and this small balance will be expended during the coming winter. Among the important pieces of work accomplished was the improvement of Woburn Parkway, forestry work in Middlesex Fells, work on the driveway along Mystic Lake in Arlington, straightening of bad corners in Forest Street, Medford, and Main Street, Stoneham, improvement of Emerson Street and Border Road in Melrose, grading on Fellsway East in Malden and along Mystic River in Medford, partial grading of river roads in Cambridge, Watertown and Newton and at the Soldiers' Field Road and Speedway in Boston, grading to improve the banks of Charles River near the band stand in Weston and to improve Forest Grove Road in Waltham and Newton, forestry work along upper Charles River in several cities and towns, forestry work in Blue Hills and Stony Brook Reservation in Quincy, Milton and Boston, rebuilding of a woods road in Blue Hills to fit it for automobile travel, partial grading of Dedham Parkway in Dedham and Boston, improvement of Revere Beach Parkway in Chelsea, Everett and Revere, and shore and roadway cleaning at Winthrop, Nahant and Lynn.

It would be unkind to wish that the distress of unemployment should again appear, but so much was accomplished by the money which became available under the emergency appropriations of 1915 that it is not amiss to keep in mind the further work that is waiting to be done whenever money becomes available from any source for such work.

First, there is forestry work to be done in all the woods reservations, and particularly in the Blue Hills Reservation and along upper Charles River.

Public desire to secure and care for the woods reservations led to the establishment of this Board and to the first appropriation for its work in 1893. Middlesex Fells, Blue Hills, Stony Brook, Hemlock Gorge and Beaver Brook Reservations were first acquired. Fine old trees then remained in only a few spots. The rest of the wood growth was largely a tangle of crowded, spindling and oftentimes diseased or fire-scarred trees and underbrush, with much fallen and decaying wood of just the sort in which fire was likely to spread and destroy the good as well as the poor trees and to burn out and impoverish the soil. It was thought that public control would protect the woods and that thus protected nature would gradually improve them. More was hoped for, but public ownership and responsibility were felt to be first and essential. The State acting for the District therefore assumed this responsibility with a threefold purpose: first to protect the woods, next to safeguard and facilitate the public in their use of them, and third to help on the work of nature in renewing them, so that they might forever be an increasing delight to the public, who for all time were to be taxed to preserve and care for them.

Once in public ownership the first danger to be averted was that from fire, an ever constant danger in the neighborhood of a large population. The woods were cleaned of the worst débris of fallen wood, and, as far as funds would permit, were thinned by the removal of such spindling growth as was most likely to be broken down by snow and add to the ready fuel for fire. This work was done with much thoroughness in the smaller reservations, but less so in the 1,200 acres of Middlesex Fells, and even less completely in the greater area of 4,000 acres in Blue Hills. Next wood paths were cleared and extended

to serve as fire breaks and to facilitate administration and policings. As a result of this early work and of the care since given to the woods, no fires have spread over any considerable area or done any serious harm. Since then, active work looking to the improvement of the woods has progressed slowly and only to the extent of the annual funds for maintenance.

Some few years ago, after a cessation for three years of the State work for repressing the gypsy moth, that pest multiplied on the north side of the Metropolitan District, and there came an outbreak of its destructive work so virulent that Middlesex Fells was almost completely defoliated. Immediate and most determined measures of repression became necessary. Over $100,000 was made available for the work in one year, and by energetic measures the tide of destruction was stemmed. The first and most necessary measure in this repression was a thorough thinning and cleaning of the woods. Though carried on under expert advice, this thinning aroused such adverse criticism from those who loved the woods' tangle and felt that the beauty of the woods was being sacrificed that it threatened the very existence of the Board. The result of the work, however, and of other measures adopted, and of their continuation in a less drastic way through subsequent years, has been that the woods of the Fells have been saved and are to-day in better condition than ever before within the memory of those now living. The pines and hemlocks have so replanted themselves and increased with a healthy growth that the neighborhood of the Ravine Road is again the admiration of skilled foresters, and gives promise of a renewal in beauty equal to what it had before its great trees were chopped off. But appropriations for this work have been reduced each year, and the expense of road work and of policing has taxed the District to its full capacity. Meanwhile, the underbrush and spindling growth have increased again more rapidly than ought to be allowed. For many years there has also been a lessened appropriation for work of repressing gypsy moths and other insect pests on outside lands, and there are now signs of an increase which may again spread to the Fells.

In the Blue Hills the work, although carried on steadily each year, has been less effective because the Reservation is nearly

four times as large as the Fells, and because there has never been so large an appropriation available for the work as that compelled for the Fells by the necessities of gypsy-moth work. Except in a few spots, the tree growth of the Blue Hills at the time the Reservation was acquired was chestnut, chiefly of sprout growth. In scattered spots there was an excellent growth of pine and white cedar and oak, but in general the tree growth was of inferior sorts, which gave no hope of making sturdy trees. The soil had been impoverished by frequent fires. In recent years the chestnut-tree blight, the most hopeless disease to control, has fastened itself upon the chestnut trees and destroyed many, as it has everywhere in the county where it has appeared. Such funds as have been available each year have been used for a gradual and progressive thinning of the woods. The area of the Reservation, however, is so great that, at the rate this work has progressed, the primary thinning cannot be completed throughout the Reservation before a secondary thinning is necessary.

The Blue Hills, or indeed the south side of the Metropolitan District, had no such infestation of the gypsy moth as had appeared on the north side of the District. This pest was found only in scattered colonies, and it was possible to control it with comparatively little work. In the neighboring town of Milton and in the more thickly settled portions of other near-by towns and cities it was under control; but in the quarry region of Quincy, bordering the Reservation, and in the great stretches of woodland in Braintree, Randolph and Canton, east, south and west of the Reservation, little work was done by the towns and private owners, and last year, when a drought in the spring made spraying difficult, the gypsy moth became almost as virulent in and around the Reservation as it was in former years in and about Middlesex Fells. Defoliation was widespread and painfully apparent. It is with regret that the Board must therefore sound a note of serious alarm and say plainly that unless drastic measures are at once adopted, there is danger that the woods of Blue Hills will be again defoliated even more extensively and perhaps destroyed.

The money available under the emergency appropriation of 1915 was used to advantage in the sections of the woods most

threatened, and all other available funds have since been employed in preparing for increased work in the spring of 1916. An appropriation of $50,000 will be asked for this work, and it may be necessary to ask for a supplementary appropriation during the spring, and it is hoped that the State Forestry Department and the towns and private owners will co-operate in work on neighboring lands outside the Reservation. Much depends upon the work done in 1916. There is need also of more extensive forestry work along the banks of the upper Charles. They have much fine tree growth which is being impaired by overcrowding, but on the whole the condition is more favorable than in the Blue Hills.

Next to forestry work in the wooded reservations there is need for careful and persistent protection and renewal of the parkway trees, and for more planting along the parkways and the comparatively barren banks of the lower Charles, and Mystic rivers, and replanting in the other reservations.

Charles River up to Watertown and Mystic River up to Mystic Lake and the tributary Alewife Brook were salt water streams in which the tide rose and fell at the time when they were acquired. The dams since built in Charles River and in Mystic River have excluded the salt water, but it takes years for the salt marshes to become mellowed and sweetened to a point when they will grow trees. Almost as soon as the Speedway marshes of Charles River were acquired, trees were planted, but they would not grow and soon died, and it was therefore thought advisable to wait a few years before making further effort to plant either trees or shrubbery. Inferior trees such as the birch are springing up, and observations made by Mr. Walter Dean of Cambridge indicate that the flora has so far changed that where in 1908 it was entirely that of the salt marshes, now about 80 per cent. are such as grow on lands which are no longer saline. Evidently, these marshes are now in a condition which warrants permanent planting. Along the parkways trees were planted generally in loam pits soon after construction was completed. Some of these trees were Carolina poplars, short-lived trees planted for quick growth in the expectation that they would have to be renewed by interplanting at a later date. Many also were elms and ashes,

which were expected to be permanent trees. Very little shrubbery was planted. Nearly twenty years have elapsed since many of the trees were planted. The poplars are reaching maturity and must soon be replaced. New insect pests — the elm-tree beetle and the leopard moth — have come, and their attacks directed against the elms and ashes have been so serious and impossible to control that many of these trees have been destroyed, and it is necessary to remove them or interplant with a view to early removal.

The Metropolitan Park System represents a wonderful accomplishment for the short period during which its acquirement and development have been progressing. But the time since it was begun has been too short for it to have reached the full development of the parks and parkways of the old world, or even of those which have grown up under more favorable soil conditions in this country. The woodlands had suffered from fire and excessive chopping of the older trees, and are for the most part underlaid by rock or impoverished soil. The river banks were for the most part salt marshes or meadows; the parkways were mostly laid out along the lines of rivers and creeks or between the better lands which had already been built upon. The parkways were constructed with new filling under an all too limited appropriation to provide for the depth and richness of loaming necessary to hasten or even support trees and shrubbery. All of these presented unfavorable natural conditions for good tree growth. The first desire was that the land should be acquired and the roads built, and this has been accomplished with rapidity and thoroughness and at a low cost for the work accomplished. During the period of this accomplishment, it has also happened, however, that the character of road building has necessarily changed to meet the change in use from that by horse-drawn vehicles to that by motor vehicles, so that all roads have had to be either resurfaced or given a more expensive form of surfacing than that required when horse-drawn vehicles were the only ones to be provided for. At many points old buildings and worn-out bridges have had to be rebuilt. Great improvements, such as the dams on Charles and Mystic rivers, have been added to the first cost of the parks and parkways. It has been as when a great busi-

ness enterprise is established and built up, or when a man sets out to acquire and lay out a great estate, the first and most necessary work of acquiring and building must be done, and the less immediately important details of development and rounding out into the perfection of a long-established business or the beauty of appearance of the old estate must be overlooked or postponed. What has been accomplished, however, has been the essential first work, and this has helped materially in the gradual evolution of the Metropolitan Parks District from a series of detached cities and towns. The time has now come when the public has adjusted itself to the change, and is beginning to look to details. It is hoped that the expenditure for annual care and maintenance which has heretofore been directed toward the foundation and preliminary work may hereafter be directed toward accomplishing more in the way of perfecting the beauty of the Park System. During the past few years much has been accomplished in the way of improving the shade trees and adding the shrubbery along the parkways, and it is expected that this work will progress and be noticeable in results. One of the best nurseries in the country has been developed in Middlesex Fells, and is supplying stronger and better trees and shrubbery than can be obtained from private nurseries. In the past year much planting has been done along the Revere Beach Parkway, Mystic River and Middlesex Fells parkways, and preparatory work for planting has been done along Charles River in the neighborhood of Soldiers' Field Road and of the driveways to Watertown. In Middlesex Fells the older pine and hemlocks are seed-bearing trees, which are rapidly replanting the Reservation with seedlings. In the Blue Hills, which once supported a good growth of pine and hemlocks, almost all of the seed-bearing trees had been cut off before the Reservation was acquired. Replanting has been begun, and already over three million seedlings have been set out, and are generally growing well.

There is an increasing use of the reservations and of every opportunity which they afford, with a correspondingly increased demand for enlarged facilities. This increase is a normal one, and it has been the policy and the economy of the Board to let it develop gradually. At first it was thought to be

unwise to attempt to provide playgrounds, boathouses, restaurants, shops or amusements such as private enterprises or municipal desire might be expected to provide. It was felt that the reservations were acquired for their great natural beauty and the opportunity for rest and recreation which such natural beauty afforded, but that their acquirement and maintenance for this purpose did not place upon this Board the duties of a municipality towards its citizens. This view has been to some extent changed by public demand and by observation of the experience and results elsewhere. It now seems that in many directions adequate public conveniences will not be served by private enterprise, unless such private enterprise is carefully regulated or brought into competition with public service of a higher standard than that likely to be secured by mere competitive private enterprise. On the other hand, it has also been found that it is inadvisable to provide too liberally for public convenience. The experience with the bath-houses is the best illustration of this fact. At the outset the bath-houses were built in order to secure an accommodation and cleanliness and decency which were not previously found in bath-houses under private ownership. The accommodations were so liberal, however, that they could be and have been somewhat abused, and it is becoming more and more necessary to adopt limitations to prevent this abuse. The present kind of private bath-rooms must be in some measure abandoned, because too large a proportion of those who hire them stay out upon the beach in bathing costume more than a reasonable time, and so deprive others of the opportunity of using them. Too many of the suits and towels provided for the bathers are stolen. Apparently this abuse can be prevented only by requiring each bather to deliver up the bath suit and towel before leaving the bath-house. Prices have been lowered rather than increased, causing a decrease of revenue, while the cost of operation has been increased by legislative requirement for days off and by other increases in the cost of labor and supplies. If this reduction in revenue continues, it may be necessary to economize by following the course pursued at Coney Island, where dressing rooms and lockers only are provided and the bathers have to provide their own suits and towels. For the present, however,

it is hoped that this may be avoided by providing lockers, and allowing the rooms to be used only as dressing rooms. Revere Beach Bath-house was established in 1898, and for many years showed a consistently increasing use, and several enlargements were made. Yet in spite of these enlargements, the number of bathers who could be accommodated has shown only a net increase of about 32 per cent. Nahant Bath-house, established in 1905, has been once enlarged, and its net increase in use has been 77 per cent. Nantasket Beach Bath-house was established in 1903, and, by changes in the arrangement of rooms and of their use, has shown an increased use of 175 per cent. This bath-house has now reached the maximum of use that can be made with present accommodations, however, and during the last season was unable to provide for many who wished to make use of it. If further increase is to be provided for, an enlargement is absolutely necessary, and an appropriation of $20,000 for this purpose will be asked for in 1916.

On the whole, however, the result achieved by the bath-houses illustrates the advisability of measures calculated to bring a reasonably high standard in all provisions for public service in or near the Metropolitan Parks. Further illustration is found in other directions. Before Nantasket Beach was acquired, uncontrolled private competition had so lowered the character of the accommodations furnished that the neighborhood of the beach had become unwholesome and its business generally unprofitable. This Board advised against acquiring the Reservation, because of its distance from the main population of the District and because of evident difficulties of administration, but as the Legislature required it and the reasons which led to this acquirement were evidently as much a desire that it should be made wholesome as that it should become merely popular, all the properties, except some unoccupied lands held by the railroads for railroad purposes in the neighborhood of the most used portion of the beach, were acquired. The buildings were reduced in number and only such occupied as would provide ample shelters and reasonable accommodations for a limited number of shops and amusements and for one restaurant. Even these buildings were very much out of repair, and were all of wood. Most necessary repairs were made,

and the buildings rented or adapted to administrative necessities. The rents have since paid for further repairs and renewals and for extensions of shelters, walks and some of the bulkheads, and other improvements necessary to conform to increasing use. At the outset, there was no competition with private business, because there were no other buildings left in the neighborhood, and the effort was merely to provide most necessary accommodations for public comfort, with a reasonable standard of excellence. Since then the railroads have found a way to allow the land outside the Reservation held for railroad purposes to be occupied by private enterprises, and today there is perhaps more business done at Nantasket outside the Park buildings than was being done in all the buildings at the time the Reservation was acquired. Observation of them, however, makes the Board still hold to the opinion that in order to preserve a reasonable standard of public convenience at this remote point, it is advisable to retain the buildings now upon the Reservation in their present use.

At other places within the Reservation, where suitable accommodations were not available, boathouses and refreshment stands and small bath-houses have been provided. There is an increasing demand for a larger number of such facilities and especially for more well-regulated picnic or play grounds. It is evident that these facilities will have to be provided in increasing numbers in the future, and it is deemed best that within the Reservation they shall be by buildings provided by the Board, so that there may be reasonable control over those who operate them.

Bulkheads for protection of the shore, in the form of sloping seats and shelter platforms, have been built of concrete at Revere Beach, and a bulkhead has been built of concrete for a distance of about 1,500 feet at Nantasket, to replace a wooden bulkhead carried away by storm. It is advisable that an extension of this bulkhead be made and that the wooden bulkheads along the entire frontage of the beach be gradually replaced by concrete.

In obedience to public demand, and aided by the emergency appropriation of 1915, a carriage road in Blue Hills has been rebuilt in form to fit it for automobile use during the summer

months, and opened to public use. This has already received so great a use as to indicate that public desire will demand that an increased number of roads within this and other reservations be widened and improved to provide for this class of travel. A border road in Middlesex Fells, from South Street to Marble Street in Stoneham, has also been opened, and it is desirable that other border roads and one road across the center of the Reservation be prepared for use by automobiles.

Under the appropriation of chapter 699 of the Acts of 1912 most of the land for a parkway from Stony Brook Reservation to the neighborhood of Boyden Square in Dedham was acquired, and under the emergency appropriation of 1915 a considerable part of a driveway through this land was filled and graded to subgrade. It is very desirable that the remaining land necessary for its completion be acquired and that the construction be gradually carried on during the next two years. Land along the southerly shore of Lower Mystic Lakes and through Arlington Park lands to Mystic Street has been given by the town of Arlington and private owners for an extension of the Mystic River Driveway, to connect with a new road across Arlington to the highway to Lexington and Lowell. It is desirable that money be provided to complete the subgrading in 1915 and for completion of surfacing in 1916. It seems wise to call attention again to the opportunity for securing entrance to the boathouse locations and land now filled for a future driveway along Charles River, on the Boston side, from Commonwealth Avenue at the corner of Cottage Farm Bridge. This road is now partially graded, and with slight additional acquirements may be made to provide a continuous driveway, for horse-drawn vehicles at least, on the Boston side of the river to the Speedway, Soldiers' Field and to Newton and beyond. The land at Commonwealth Avenue is the key to the situation, and its acquirement at present will avoid the added expense which at any time may come if new buildings are erected upon the land. It is very desirable that Shortside Road, Charles River Embankment, be extended to a connection with Beacon Street. Before intervening houses were rebuilt, such connection might have been made not only with Beacon Street but also with Arlington Street. This opportunity is

gone, and Otter Street, which is at present the only connection, is narrow and ill-kept. The Board recommends that Otter Street be widened by a slight additional acquirement of land and rebuilt, and that funds be provided for this purpose.

Of late years it has frequently happened that the rebuilding of bridges across rivers between separate municipalities of the Metropolitan Parks District has been delegated to this Board, even when they were to be thereafter maintained by the several municipalities. Several such bridges have already been built, of which Anderson Bridge, between Cambridge and Boston, at the Stadium, is the best example. The Board now has in hand the rebuilding of Neponset Bridge, between Boston and Quincy, North Beacon Street Bridge, between Boston and Watertown, and Commonwealth Avenue Bridge, between Newton and Weston. In connection with the construction of the North Beacon Street Bridge, it is to be noted that the appropriation is available for the bridge and approaches, but that the Board, although desirous of extending the construction of approaches on the Watertown side to the westerly end of the Arsenal grounds, will be unable to do so unless the language of the act is broadened to permit this extension.

A change in the present method of paying employees of this Board who work outside its main office is desirable. The pay rolls for these employees are made up and forwarded with the schedules for bills for supplies and contract liabilities to the Auditor, and when approved by him reach the Treasurer. Then the Treasurer pays the bills for supplies and contract liabilities and the amounts due such of the employees as work in the main office of the Board directly through this office; but instead of paying the other employees directly, he sends a check for the gross amount to the Secretary of the Board, who then pays the other employees through a paymaster employed by the Board. This makes the Board a disbursing agent of the treasury, and charges to the expenditures of the Board expenses which seem to belong properly to the treasury of the Commonwealth. It is respectfully urged that the custom in regard to these matters be standardized and that all payments, including those for wages, be made according to the same system pursued in regard to other disbursements.

In brief, the Board now has under construction, or about to be commenced, buildings at Revere Beach, Charles River Basin and in the Blue Hills; bridges between Newton and Weston, Watertown and Boston, and Quincy and Boston, and a parkway with one bridge in Quincy; driveways along Charles River, Alewife Brook, and probably a driveway along the north side of Lake Quannapowitt, in addition to the many-sided maintenance and provision for safety and public comfort throughout the metropolitan parks and parkways. All of this work is carried on through the central office in Boston and its Engineering Department, with occasional special professional advice and assistance, and through seven division headquarters. The reservations include approximately 9,464 acres of land and the parkways 1,095 acres, with 42 miles of parkways, 52 miles more of carriage roads, 61 miles of police signal wire and over 1,300 street lights, 12 miles of seashore, 57 miles of riverbank, 7 dams, more than 100 locks, gates, sluices and culverts, 38 bridges and more than 200 buildings. The Board maintains a labor force and a police force of 150 men, for the care of this property and its public use. It operates three large bath-houses and several small ones. The increase in areas and provision for public comfort, and the increase in cost of labor and supplies and for vacations and days off, has multiplied the annual expense of the system. Yet the expense of administration in the central office, including salaries of commissioners, remains substantially unchanged. The Metropolitan Park Act requires the Board to maintain suitable central offices where its records and plans may be available for public examination. Such an office has been maintained for many years at 14 Beacon Street, where approximately 5,000 square feet of floor space, covering an entire floor of the building, are rented for $6,000. During the past year, suggestion has been made that the Board should move its quarters to the State House and pay rent to the State instead of paying rent in a private building. The accommodations now occupied at 14 Beacon Street are in many respects inadequate, but, even with this limitation, they are more adequate and more conveniently arranged than any room or group of rooms which have yet been suggested for use by this Board in the State House, and, more-

over, there seems to be no authority in law for fixing rental. The Board has not therefore been able to arrange for such removal, and unless the accommodations necessary for its work are to be provided and a material saving made to the District, it is the opinion of the Board that there is no good reason for removal to the State House. Moreover, it is the opinion of the Board that its work can be better performed from the District offices outside the State House than from offices within the State House.

All of which is respectfully submitted.

WILLIAM B. DE LAS CASAS,
EDWIN U. CURTIS,
ELLERTON P. WHITNEY,
EVERETT C. BENTON,
CHARLES J. BARTON,
Metropolitan Park Commission.

DECEMBER, 1915.

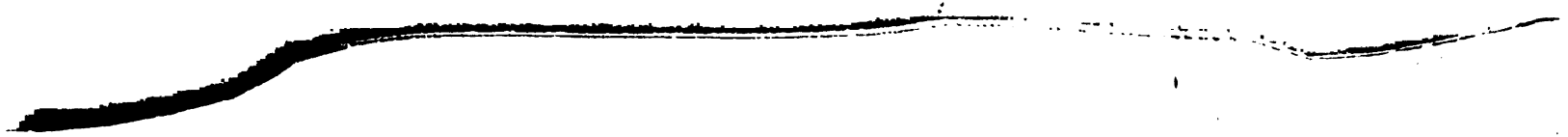
REPORT OF THE SECRETARY.

Hon. WILLIAM B. DE LAS CASAS, *Chairman, Metropolitan Park Commission.*

SIR: — I submit herewith the report of the Secretary for the year ending Nov. 30, 1915.

1. ACQUIREMENT OF LANDS.

A considerable amount of new land has been acquired the past year to carry out further the provisions of chapter 699 of the Acts of 1912. The largest and most expensive acquirement was for the Old Colony Parkway from Columbia Road to Neponset Avenue Bridge over the Neponset River. Purchase has been made of a considerable amount of land needed for the extension of Winthrop Parkway, and options on other parcels have been accepted. Options have also been accepted on nearly all the land required for the Parkway around the northerly end of Lake Quannapowitt in Wakefield. A taking was made of a part of a lot owned by the city of Medford for the extension of Mystic Valley Parkway to Mystic Avenue. This taking, with the transfer for care and control to this Board of all the Medford Park lands on Mystic River between Cradock and Wellington bridges, made possible the construction of the extension of the Parkway from Main Street to Mystic Avenue. A small additional taking was made for a better alignment of Dedham Parkway. A small parcel was also purchased from the Adams Real Estate Trust on Black's Creek in Quincy, to complete the land acquirements needed for the extension of Furnace Brook Parkway from Hancock Street to Quincy Shore Reservation. All the foregoing acquirements were made under authority of said act of 1912. Chapter 102 of the General Acts of 1915 also authorized the Board to acquire land for a service and storage building outside the limits originally fixed by law



for the Boston Embankment. This has been done in the purchase of a small lot of 1,743 square feet at the northeasterly corner of Back Street and the Embankment. The town of Arlington, under authority of chapter 188 of the Special Acts of 1915, conveyed to the Board as a gift a strip of land on the westerly side of Lower Mystic Lake for a branch of Mystic Valley Parkway from Medford Street to the junction of Mystic Street in Arlington.

There are about 113 claims outstanding for land taken or purchased, which will require, it is estimated, about $260,980.45 to settle.

2. SUPERINTENDENCE.

By chapter 4 of the General Acts of 1915 the Legislature appropriated the sum of $50,000 "for the purpose of providing immediate work on, and continuing the construction, improvement and development of," the reservations, and by chapter 5 another like sum for the same purpose on parkways. These are commonly called "emergency" appropriations. This money was expended so as to give work to as many different individuals as possible, and on work not provided for in the current maintenance appropriations. Work was given to some 1,081 laborers at many different points throughout the District. The kind of work which could be done immediately was somewhat limited by the winter season, when the appropriation became available. Nevertheless much permanent work was done which could not have been done with the ordinary maintenance appropriations. A large amount of forestry work was done in Blue Hills, Stony Brook, Middlesex Fells and Charles River reservations. One of the most appreciated improvements accomplished was the widening, straightening and improving for automobile travel the following roads in Blue Hills Division: Blue Hills Parkway from Canton Avenue to Unquity Road; Unquity Road; North Border Road; Administration Road from Wampatuck Road to Randolph Avenue; and Wampatuck Road from Furnace Brook Parkway to Administration Road. The result is a continuous automobile drive from Mattapan Square over Blue Hills Parkway into Blue Hills Reservation and through the Reservation to Furnace Brook Parkway in Quincy, and thence over Quincy

Shore Reservation to the Old Colony Parkway in Atlantic. These roads were opened to automobile travel Sept. 17, 1915, and will be kept open for travel as long as the weather permits. A large amount of grading and filling was also done on a projected road along Charles River in Cambridge from Gerry's Landing to Arsenal Street. When further appropriations allow the completion of this road, it will add the final link in a continuous drive along Charles River from Watertown Square to Mt. Auburn Street and Fresh Pond Parkway in Cambridge. A water pipe was laid from the metropolitan water main in South Street, Stoneham, to the picnic ground at the Sheepfold in Middlesex Fells Reservation near the new terminal of the Boston Elevated and Bay State Street Railway lines. A supply of pure drinking water for the public is in this way provided for, and an incidental supply for fire and moth-fighting purposes. Considerable grading was done on the banks of Mystic River, and a new band-stand site filled and graded at Riverside near Weston Bridge. This more important work, together with much of lesser importance, was accomplished under the "emergency" appropriation for reservations. Under the parkway "emergency" appropriation, Forest and Main streets in Middlesex Fells were straightened and widened, dangerous curves being eliminated; similar work was done on the Emerson Street Border Road, which is practically a continuation of Lynn Fells Parkway in Middlesex Fells Reservation; a roadway in the Dedham Parkway was practically subgraded nearly its entire length, and a comparatively small additional appropriation would allow its completion; a section of Revere Beach Parkway from Broadway, Revere, to Washington Avenue, Chelsea, the subgrading of which was done before automobiles had come into general use, was reconstructed with the expectation that the cost of annual maintenance of this section will hereafter be lessened. Considerable filling and grading was done on the branch of Mystic Valley Parkway for which the town of Arlington gave the land, as above noted. Much other work of lesser importance was also done under this "emergency" parkway appropriation.

The work done in Blue Hills Division under the "emergency" act has already been mentioned. In addition to for-

estry work done under this act, 285,800 pine seedlings were planted in Blue Hills Reservation and some 15,000 in Stony Brook Reservation. At Quincy Shore Reservation further grading of the shore, under the appropriation of chapter 45 of the Resolves of 1914, has been done. There are no further funds available under this appropriation, although much more work of a similar nature would be a benefit. The most important work in progress in this division is the construction under contract of the extension of Furnace Brook Parkway from Hancock Street to Quincy Shore Reservation.

Owing to the unusually light rainfall during the spraying season, the work of fighting the gypsy and brown-tail moths was greatly crippled this year in Blue Hills Reservation, where small brooks and springs are necessarily relied on to a large extent for water for spraying purposes. The result was a large increase in the area defoliated. More wells and water holes have been dug and additional paths for spraying machines roughed out, but to do really effective work over the great area of this Reservation under present conditions, and to regain lost ground, more spraying machines, hose and other apparatus and labor should be provided than heretofore. With this in view a special maintenance item of $50,000 has been asked for this year.

Each of the original locations granted through Middlesex Fells to the Boston Elevated Railway Company and the Bay State Street Railway Company terminated at the Medford-Stoneham town line, the Boston Elevated Railway Company having no authority to hold a location beyond that line. This point being the limit of a 5-cent fare, passengers intending to visit the Fells naturally alighted here, and, following the line of least resistance, tended to scatter over Forest Street, and congregate close to Spot Pond, which is a water reservoir under the control of the Metropolitan Water and Sewerage Board. Forest Street in this vicinity was narrow, with bad curves, had no sidewalks and was traveled much by automobiles. Furthermore it was not possible to locate a needed shelter and refectory at this point because of lack of opportunity to dispose of drainage and sewage without danger of polluting Spot Pond. On the other hand the Metropolitan Water and Sewerage

Board felt that the nuisances committed on the shores of the pond threatened contamination to the water supply. The question of changing the terminal point of the railroads was therefore taken up with the railroads by the two Boards the latter part of 1914. As a result, the two companies have come to a traffic agreement with each other whereby the terminal point has been located further north in the Reservation, at the Sheepfold, so called, which is the natural assemblage place and picnic grounds of the Reservation. Here a playground and an opportunity for outdoor sports may be provided, and the situation allows the location of a waiting room and refectory with proper drainage outside the watershed of Spot Pond. A water supply has already been provided at this point as noted under the "emergency" law.

Another important improvement in this division this year was the substitution of a new subpolice station and service sheds for the old wooden station on Middlesex Fells Parkway at the junction of Fellsway East and West. The extension of Mystic Valley Parkway from Main Street to Mystic Avenue has also been constructed under the provisions of chapter 699 of the Acts of 1912.

The border road of Middlesex Fells Reservation from South Street to the Bear Hill entrance, Stoneham, has been opened to the use of automobiles, and will be kept open hereafter when the seasons of the year are such as to allow this kind of travel on a road of this character.

Wellington Bridge was fully opened to travel May 1, 1915.

The Anderson Bridge, constructed under authority of chapter 439 of the Acts of 1911 and chapter 92 of the Acts of 1912 from funds provided by Mr. Larz Anderson, was turned over Aug. 23, 1915, to the Boston and Cambridge Bridge Commission for maintenance as provided under the act. The cost of this bridge, exclusive of cost of approaches, which is levied upon the cities of Boston and Cambridge, was $181,268.75, being less than the original estimate, and leaving a balance of $18,731.25 to be returned to Mr. Anderson from the trust fund contributed by him for the purpose. The cost of the approaches was $29,999.88: for the approach in the city of Boston, $16,375.14; for that in the city of Cambridge, $13,624.74.

MIDDLESEX FELLS PARKWAY.—Fellsway East. Border Road at Fellsmere.

By chapter 303 of the Special Acts of 1915, $30,000 was appropriated for the purpose of constructing a concrete bulkhead for the protection of Revere Beach. This work is under contract and well along toward completion. It provides about 1,500 feet of concrete shore protection southerly from Revere Street, making, with the wall constructed under chapter 87 of the Resolves of 1914, a total of about 3,000 feet of shore protection. Chapter 315 of the Special Acts of 1915 authorized the Board to expend $35,000 for the purpose of renewing or replacing the boilers of the Revere Beach Bath-house and for providing a boiler house and proper means for furnishing heat and power. The location selected for the boiler house was a lot owned by the Commonwealth opposite the bath-house on the other side of Ocean Avenue. The house is now under construction and will be ready for use next season.

The Revere Beach Bath-house was opened to the public June 12, and closed September 22, a period of one hundred and three days. The total number of bathers was 185,421, 26,589 more than in 1914, and consisted of 108,646 male and 76,775 female bathers. The gross receipts were $38,361.65. One hundred and eighty accident cases were treated in the emergency room.

The Nahant Beach Bath-house was opened June 26, and was closed September 11, a period of eighty days. The total number of bathers was 44,364, an increase of 8,385 over 1914, and was composed of 24,287 males and 20,077 females. The gross receipts were $8,527.40. The 148 additional bathrooms for women and the 456 men's lockers, provided under the $12,000 appropriation of chapter 265 of the Acts of 1915, served materially in accommodating the public on crowded days.

In connection with these bath-houses it should be noted that the average amount received per bather has diminished in the last two years. This is undoubtedly due in part to the increasing use of lockers at the lower price and to the increasing practice of bathers of furnishing their own bath suits. If these tendencies continue, the time will soon come when the receipts at these bath-houses will fall below the cost of maintenance.

In the Lower Basin Division of Charles River a police signal cable has been laid in the Basin from the Dam to Water-

town. This gives a police signal system for the division much more satisfactory than the telephone system which had to be relied on before.

The following athletic events were held on the Basin this year: —

April 7. Eight-oar boat race between Harvard and Union Boat clubs.
May 1. School Boys' Rowing Association races.
May 5. Harvard Boat Club races.
May 6. Harvard Boat Club races.
May 13. Harvard and Union Boat Club races.
May 14. Harvard Boat Club races.
May 15. Harvard and Yale boat races.
May 18. School boys' boat races.
May 20. Interscholastic rowing races.
May 21. School Boys' Rowing Association races.
May 29. Harvard Athletic Association rowing regatta.
May 31. Harvard Athletic Association rowing regatta.
July 1. New England Amateur Association rowing regatta.
July 5. City of Boston swimming races.
September 6. New England Amateur Rowing Association regatta.
September 11. New England Amateur swimming races.
September 18. New England Amateur Swimming Association. Three-minute championship races.
September 18. "Boston American" girls' swimming races.
October 12. New England Amateur Rowing Association races.
October 27. Harvard Class rowing races.
October 28. Harvard Class rowing races.
October 29. Harvard Class rowing races.

At Nantasket Beach Reservation, Nantasket Avenue has been resurfaced from Surfside to Wharf Avenue, and repaired the remainder of the distance to Atlantic Hill. The cost of maintenance of this road is excessive, because the request of the Board heretofore for funds to rebuild it, to meet the requirements of modern traffic, have not been granted.

Chapter 204 of the General Acts of 1915 appropriated $6,000 for a concrete bulkhead for the protection of the shore of the Reservation. With this appropriation a concrete bulkhead was constructed under contract from the southerly end of the Reservation past the bath-house part way to the hotel, and was continued to the hotel with Reservation funds. The old wooden bulkheads, which have hitherto served to protect the shore, are

gradually decaying and must be entirely replaced before a great while. In the long run, concrete walls would undoubtedly be the cheaper and more satisfactory form of construction. It would be better, therefore, gradually to replace sections of the old bulkhead with concrete at the expense of a comparatively small appropriation each year.

The patronage and use of Nantasket Beach Bath-house is steadily increasing. The gain of 1915 over 1914 was over 20 per cent., and 25 per cent. over the average of the four preceding years. The already inadequate facilities of the bath-house are becoming even more overtaxed each year. It is strongly recommended that an appropriation be secured this year to enlarge and improve the bath-house.

Of the 74,212 bathers using the bath-house this year, 37,596 were males and 36,616 females. The gross receipts were $15,959.90. The bath-house was opened for business temporarily June 21, and permanently from June 26 to September 6, inclusive. It was again opened temporarily on September 11, 12 and September 16 to 22, inclusive, on account of the warm weather.

The band concerts have been as popular as ever. The number of people frequenting Nahant Beach and attending the band concerts has grown rapidly, and the demand for more band concerts has become correspondingly greater. Five additional concerts were therefore given on Sunday afternoons at this beach. The following is the schedule of concerts given throughout the system.

Concerts were given at Revere Beach on Sunday, Wednesday and Saturday afternoons and evenings during the period from July 7 to September 5, inclusive, also afternoons and evenings of July 5 and Labor Day. At Nahant Beach concerts were given Friday afternoons and evenings, June 25, July 9, 16, 23, 30, August 6, 13, 20, 27 and September 3; Sunday afternoons, July 18 and 25, August 22 and 29; and on Monday evening, June 14, celebration of Elks. Concerts were given at Nantasket Beach every afternoon and evening, except Mondays, during the period from July 6 to September 5, inclusive, also on July 5 and Labor Day. Other concerts were given as follows: foot of Great Blue Hill, 7; Fellsmere Park, Malden, 5;

Manchester Field, Winchester, 6; Broadway Park, Somerville, 8; Speedway, Brighton, 8; Charles River Road, Watertown, 5; Fox Island, Waltham, 6; Charles River Reservation, Riverside, 6; Boston Embankment, 9; Chelsea Playground, 4; Ell Pond Park, Melrose, 4; Quincy Shore Reservation, 3; Furnace Brook Parkway, 2; Mystic Valley Parkway, 2; Wakefield, 3; Waltham Canoe Club Regatta, 1; Cambridge Homes for Aged People, 2; Waltham Carnival, 1; Woburn, 1; Winthrop Shore Reservation, 1; Stony Brook Reservation, 1. The total number of concerts given, including those at Nahant, Revere Beach and Nantasket, was 280. All of the $25,000 appropriated for concerts was expended.

The nominal strength of the police force is the same as a year ago. As I then noted in my report, however, the effective strength of the force is reduced by days off, vacations and sick leave to an average of about 120 men. In addition to this there are men on the force whose ability to perform all kinds of police duty has been curtailed by accidents received in the service, but who are not incapacitated to such an extent that they may be retired on half pay, and their places filled by new men. Naturally the hazards of the service will create a greater proportion of such men as time goes on. To-day the actual number able to perform all the duties of a patrolman when called upon, omitting superior officers, is only about 114. In the meantime the acquisition of parkways under authority of chapter 699 of 1912 has added, or will shortly add, over nine additional miles of parkway lands and roads to be policed, and largely in detached stretches of parkway. Additional roads in the reservations are also being opened up from time to time to automobile travel. More and more public use is being made of parts of the reservations hitherto needing little police supervision. On special occasions, such as carnivals or other public celebrations at some particular part of the system, it is necessary to neglect the proper policing of other parts for the time being. There is no force which can be called on in such cases as temporary reinforcement. For these reasons it would seem worth while to consider legislation authorizing the Board to create a reserve force such as every city now has.

The total number of arrests or complaints in court the last year was 1,746. The causes were as follows: drunkenness, 736;

violation of automobile speed limit rule, 395; violation of other rules, 114; violation of automobile laws, 264; violation of town ordinances limiting speed of automobiles, 62; assault and battery, 52; larceny and attempt at larceny, 31; breaking and entering, 1; gaming, 12; indecent exposure, 6; miscellaneous offences, 73.

As the control of automobile travel forms an ever-increasing part of police duty, the following census of automobile travel taken between the hours of 7 A.M. and 9 P.M. each day, August 23 to 29, and October 10 to 16, inclusive, at the points mentioned will give some idea of this kind of work falling on the police force. Saugus River Bridge was selected as one point for the census, because it is in the main artery of travel over Revere Beach Parkway and Reservation to and from the North Shore, New Hampshire and Maine; Wellington Bridge, because it is the main artery between Boston and the points reached by Revere Beach Parkway on the one hand and Middlesex Fells Parkway on the other; and Mattapan Bridge, because it is the throat of the system on the south of Boston.

	Automobiles.	Other Motor Vehicles.	Horse-drawn Vehicles.	Total.
August 23 to 29: —				
Saugus River Bridge,	21,810	675	521	23,006
Malden River Bridge,	32,018	154	114	32,286
Wellington Bridge,	26,082	889	2,115	29,086
Mattapan Bridge,	23,042	1,701	2,600	27,343
Soldiers' Field Road,	2,440	40	527	3,007
Mystic Valley Parkway (corner Main Street, Medford),	7,255	22	84	7,361
Lynn Shore Reservation (Prescott Place),	16,078	–	325	16,403
Alewife Brook Bridge,	10,510	46	141	10,697
October 10 to 16: —				
Saugus River Bridge,	15,696	259	485	16,440
Malden River Bridge,	23,427	75	92	23,594
Wellington Bridge,	28,585	837	1,789	31,211
Mattapan Bridge,	35,835	2,780	5,000	43,615
Soldiers' Field Road,	3,547	51	1,549	5,147
Mystic Valley Parkway (corner Main Street, Medford),	10,220	33	99	10,352
Lynn Shore Reservation (Prescott Place),	9,337	0	143	9,480
Alewife Brook Bridge,	10,340	35	83	10,458

Mention was made in the report last year of the gift to the Commonwealth of the Riverside Recreation Grounds. At the time this gift was made, the trustees, who had the control and management of the grounds, had authority under chapter 769 of the Acts of 1913 to discharge the sewage from said grounds into the sewers of the city of Newton, and thence into the South Metropolitan Sewerage System, upon such terms as might be agreed upon by the trustees and the city of Newton and approved by the Metropolitan Water and Sewerage Board. A formal agreement for this purpose has not been made by the trustees, however, and the need of some sewer connection for these grounds is urgent. It is suggested that the Board obtain authority from the Legislature to make this connection on somewhat similar lines to that given the trustees.

Since the completion of the work of straightening and deepening the channel of Alewife Brook, under the provisions of chapter 529 of the Acts of 1906, experience has shown that the brook has a constant tendency to fill up and shoal at various places, and, consequently, that in order to preserve its use as a drainage channel and also to maintain navigation of small boats, it will be necessary to dredge parts of the stream from time to time. A dredger adapted to this purpose is therefore needed, and an appropriation of $3,000 to provide for this should be called for.

Plans for the North Beacon Street Bridge, so called, which the Board was directed to build by chapter 780 of the Acts of 1914, have been approved by the Secretary of War, the mayor of Boston and the selectmen of Watertown, the necessary licenses obtained from the Port Directors of Boston and the War Department, and the contract for construction let. The contract calls for completion Oct. 31, 1916.

The contract for dredging the Charles River between Moody Street Dam and the Waltham-Watertown line, authorized by chapter 763 of the Acts of 1914, has been let. The section to be dredged under the appropriation of $20,000 is from Elm Street to Bleachery Dam. The actual work of dredging has been delayed because it was necessary for the contractor to construct a special dredger for the work.

Considerable work has been done on the dredging of Aberjona

LYNN FELLS PARKWAY. — Effect of Tree and Shrub Planting.

River in Mystic Valley Parkway in Winchester, under chapter 249 of the Special Acts of 1915, which is under contract, and the contract will be completed on or before April 30, 1916.

The work of constructing a driveway from Brooks Street in Brighton to Charlesbank Road in Newton, on the southerly bank of Charles River, authorized by chapter 188 of the General Acts of 1915, will be completed early in the spring.

The beginning of the work of constructing a parkway on Alewife Brook from Powder House Boulevard in Somerville to Massachusetts Avenue in Cambridge, authorized by chapter 243 of the General Acts of 1915, has been embarrassed by the fact that a corner of a car barn of the West End Street Railway Company, near Broadway in Somerville, projects into the space desired for a really satisfactory alignment of the road. It seems probable, however, that some plan of narrowing the roadway at this point will ultimately be worked out so as to obviate this obstruction without a further taking of land. Negotiations with the railway company show such a taking would be expensive and would require a further appropriation.

The work of rebuilding Weston Bridge, authorized by chapter 368 of the Special Acts of 1915, has been delayed by the fact that the appropriation of $50,000 is not sufficient to build both the bridge and the approaches to it.

Preliminary studies and plans have been made of the Neponset Avenue Bridge over Neponset River, which the Board was authorized to construct by chapter 300 of the General Acts of 1915, and it is expected that the contract will be let early next year.

Chapter 21 of the Resolves of 1915 required the Board to investigate the advisability of taking Boston Rock, so called, in the city of Melrose, and report to the General Court on or before the second Wednesday in January next. Chapter 75 of the Resolves of 1915 directs the Board to report, on or before the first Monday in February, its recommendations for the proper development of West Roxbury Parkway, returned to the control of the Board by chapter 270 of the General Acts. Chapter 87 of the Resolves of 1915 requires the Board to report, on or before the second Monday of January, the cost of acquiring land for and constructing an extension of Woburn

Parkway from Pond Street to Wildwood Street, Winchester, or to such other point in said town as will furnish a through connection to Mystic Valley Parkway. Chapter 64 of the Resolves of 1915 also directed the Board and the Massachusetts Highway Commission, sitting as a Joint Board, to investigate the desirability of making that part of Ocean Avenue in Revere from Eliot Circle to Revere Street a boulevard or State highway. Copies of all these reports will be found in the Appendix.

3. Finances.

Detailed statements of the receipts and expenditures the past year will be inserted in the Appendix to the report.

Loan Appropriations.

The appropriations heretofore made in the form of loans, with accretions thereto, are as follows: —

Metropolitan Parks Loan Fund.

Original appropriation, chapter 407, Acts of 1893,	$1,000,000 00
First Revere Beach Act, chapter 483, Acts of 1894,	500,000 00
Charles River Act, chapter 509, Acts of 1894,	300,000 00
Second Revere Beach Act, chapter 305, Acts of 1895,	500,000 00
General appropriation, chapter 466, Acts of 1896,	1,000,000 00
General appropriation, chapter 464, Acts of 1897,	500,000 00
General appropriation, chapter 530, Acts of 1898,	1,000,000 00
Revere Beach Bath-house Act, chapter 142, Acts of 1899,	125,000 00
General appropriation, chapter 396, Acts of 1899,	300,000 00
Charles River Improvement Act, chapter 465, Acts of 1900,	50,000 00
Fuller's Wharf Act, chapter 467, Acts of 1900,	30,000 00
General appropriation, chapter 445, Acts of 1901,	450,000 00
Mystic River Bridge Act, chapter 492, Acts of 1901,	200,000 00
General appropriation, chapter 290, Acts of 1903,	125,000 00
Newton Upper Falls Bridge Act, chapter 391, Acts of 1903,	40,000 00
Continuing appropriation, chapter 429, Acts of 1903, for 1903,	300,000 00
For 1904,	300,000 00
For 1905,	300,000 00
For 1906,	300,000 00
For 1907,	300,000 00
Nahant Beach Bath-house Act, chapter 326, Acts of 1904,	70,000 00
Reimbursing loan for moth expense, chapter 486, Acts of 1906,	50,000 00

Purification of Mystic River, Alewife Brook and adjacent water-courses, ponds and drainage areas, chapter 529, Acts of 1906,	$100,000 00
Additional appropriation for purification of Mystic River, etc., chapter 529, Acts of 1907,	25,000 00
Mystic River and Winthrop Shore Act, chapter 652, Acts of 1908,	70,000 00
Charles River Land Act, chapter 628, Acts of 1910,	50,000 00
Alewife Brook Purification Act, chapter 458, Acts of 1911,	15,000 00
Work for Unemployed, chapter 4, Special Acts of 1915,	50,000 00
Weston Bridge Act, chapter 368, Special Acts of 1915,	50,000 00
	$8,100,000 00
To provide for interest and sinking fund requirements to 1900, chapter 311, Acts of 1897,	900,000 00
Total amount of loans,	$9,000,000 00
Amounts received from sales of buildings, receipts from bath-house, fines, etc.,	198,942 81
Total,	$9,198,942 81

METROPOLITAN PARKS LOAN FUND, SERIES II.

Original boulevard, chapter 288, Acts of 1894,	$500,000 00
General appropriation, chapter 472, Acts of 1896,	500,000 00
General appropriation, chapter 521, Acts of 1897,	1,000,000 00
Saugus Bridge Act, chapter 547, Acts of 1898,	100,000 00
General appropriation, chapter 428, Acts of 1899,	500,000 00
Mattapan Bridge Act, chapter 443, Acts of 1900,	75,000 00
Winchester Act, chapter 444, Acts of 1900,	50,000 00
Revere Beach Parkway Act, chapter 445, Acts of 1900,	200,000 00
General appropriation, chapter 172, Acts of 1902,	450,000 00
General appropriation, chapter 359, Acts of 1903,	110,000 00
Continuing appropriation, chapter 419, Acts of 1903, for 1903,	300,000 00
For 1904,	300,000 00
For 1905,	300,000 00
For 1906,	300,000 00
For 1907,	300,000 00
Alewife Brook and Fresh Pond Parkway Act, chapter 651, Acts of 1908,	50,000 00
Continuing appropriation, chapter 699, Acts of 1912, for 1913,	200,000 00
For 1914,	200,000 00
For 1915,	200,000 00

Wellington Bridge Act, chapter 794, Acts of 1914,	$115,000 00
Work for unemployed, chapter 5, Special Acts of 1915,	50,000 00
Alewife Brook Parkway construction, chapter 243, General Acts of 1915,	35,000 00
Neponset Bridge Act, chapter 300, General Acts of 1915,	350,000 00
	$6,185,000 00
To provide for interest and sinking fund requirements to 1900, chapter 311, Acts of 1897,	100,000 00
Total amount of loans,	$6,285,000 00
Receipts from sales, etc.,	29,914 16
Total,	$6,314,914 16

NANTASKET BEACH LOAN.

Appropriation, chapter 464, Acts of 1899,	$600,000 00
Appropriation, chapter 456, Acts of 1901,	100,000 00
Total amount of loans,	$700,000 00
Receipts from rents, etc.,	5,881 50
Total,	$705,881 50

CHARLES RIVER BASIN LOAN.

Bonds issued for 1904,	$250,000 00
Bonds issued for 1905,	400,000 00
Bonds issued for 1906,	600,000 00
Bonds issued for 1907,	1,150,000 00
Bonds issued for 1908,	400,000 00
Bonds issued for 1909,	850,000 00
Bonds issued for 1910,	475,000 00
Bonds issued for 1911,	300,000 00
Appropriation, chapter 539, Acts of 1913,	40,000 00
Driveway, Brooks Street to Charlesbank Road, chapter 188, General Acts of 1915,	35,000 00
Total amount of bonds,	$4,500,000 00
Receipts added to loan,	9,368 91
Total,	$4,509,368 91

Expenditures from Loans.

The following tables show the total amount expended in each of the foregoing loans, the total cost of each reservation and parkway to Dec. 1, 1915, and the amount charged by the Auditor's department to meet the sinking fund and interest requirements previous to Jan. 1, 1900. The item of "Miscellaneous" in these tables includes cost of construction of roads, buildings and of all other work of construction, and all other charges against these loans except those for land, general expenses, sinking fund and cost of maintenance required by law to be charged to loans up to 1897. The total charges for maintenance to 1897, general expenses and sinking fund are given separately at the end of the tables. The total amounts charged to those loans are as follows: —

METROPOLITAN PARKS LOAN FUND.

Land,	$5,302,853 40
Miscellaneous, including construction of roads, buildings, etc.,	3,334,427 16
General expense,	163,371 12
Maintenance to Jan. 1, 1897, sinking fund assessments to Jan. 1, 1900, and interest,	290,326 56
	$9,090,978 24

METROPOLITAN PARKS LOAN FUND, SERIES II.

Land,	$1,855,390 58
Miscellaneous, including construction of roads, buildings, etc.,	3,587,586 17
General expense,	107,090 19
Sinking fund assessments to Jan. 1, 1900, and one-half interest,	59,195 89
	$5,609,262 83

NANTASKET BEACH LOAN.

Land,	$603,329 57
Miscellaneous, including construction of buildings, etc.,	102,551 93
	$705,881 50

The amounts expended from these loans for the fiscal year ending Nov. 30, 1915, are stated in tables in the financial statement.

METROPOLITAN PARKS LOAN FUND.

Blue Hills Reservation: —		
Land,	$363,357 29	
Miscellaneous,	307,058 66	
		$670,415 95
Middlesex Fells Reservation: —		
Land,	$691,112 69	
Miscellaneous,	294,505 47	
		985,618 16
Revere Beach Reservation: —		
Land,	$1,162,947 67	
Miscellaneous,	800,999 04	
		1,963,946 71
Stony Brook Reservation: —		
Land,	$281,243 87	
Miscellaneous,	76,810 67	
		358,054 54
Beaver Brook Reservation: —		
Land,	$29,819 29	
Miscellaneous,	24,437 35	
		54,256 64
Hemlock Gorge Reservation: —		
Land,	$53,254 00	
Miscellaneous,	15,543 94	
		68,797 94
Charles River Reservation: —		
Land,	$1,479,846 25	
Miscellaneous,	329,727 06	
		1,809,573 31
Neponset River Reservation: —		
Land,	$233,473 04	
Miscellaneous,	46,418 97	
		279,892 01
Mystic River Reservation: —		
Land,	$242,533 21	
Miscellaneous,	380,815 51	
		623,348 72
Lynn Shore Reservation: —		
Land,	$361,199 29	
Miscellaneous,	243,580 01	
		604,779 30
Quincy Shore Reservation: —		
Land,	$73,726 26	
Miscellaneous,	198,159 19	
		271,885 45

Winthrop Shore Reservation: —		
Land,	$51,067 32	
Miscellaneous,	170,560 99	
		$221,628 31
Hart's Hill Reservation: —		
Land,	$10,000 00	
Miscellaneous,	202 35	
		10,202 35
King's Beach Reservation: —		
Land,	$24,297 21	
Miscellaneous,	1,551 63	
		25,848 84
West Roxbury Parkway: —		
Land,	$244,976 01	
Miscellaneous,	8,313 67	
		253,289 68
Wellington Bridge: —		
Miscellaneous,	$185,317 42	
		185,317 42
Nahant Beach Bath-house: —		
Miscellaneous,	$67,794 58	
		67,794 58
Boylston Street Bridge: —		
Miscellaneous,	$45,838 57	
		45,838 57
Alewife Brook Purification: —		
Miscellaneous,	$136,398 90	
		136,398 90
Weston Bridge: —		
Miscellaneous,	$393 18	
		393 18
General expense,		163,371 12
		$8,800,651 68
Sinking fund requirements to 1896,	$18,980 18	
Care and maintenance to July 1, 1896,	85,813 46	
Care and maintenance, July 1, 1896, to Jan. 1, 1897,	19,604 06	
Sinking fund assessment for 1897,	63,630 70	
Sinking fund assessment for 1898,	9,755 55	
Sinking fund assessment for 1899,	64,224 00	
Interest,	28,318 61	
		290,326 56
Total charged to Dec. 1, 1915,		$9,090,978 24
Balance Dec. 1, 1915,		107,964 57
		$9,198,942 81

METROPOLITAN PARKS LOAN FUND, SERIES II.

Blue Hills Parkway: —		
Land,	$133,492 02	
Miscellaneous,	269,513 47	
		$403,005 49
Middlesex Fells Parkway: —		
Land,	$262,628 83	
Miscellaneous,	611,944 81	
		874,573 64
Mystic Valley Parkway: —		
Land,	$203,990 91	
Miscellaneous,	377,370 50	
		581,361 41
Revere Beach Parkway: —		
Land,	$537,445 51	
Miscellaneous,	869,550 15	
		1,406,995 66
Neponset River Parkway: —		
Land,	$83,941 75	
Miscellaneous,	36,100 54	
		120,042 29
Fresh Pond Parkway: —		
Land,	$44,086 25	
Miscellaneous,	31,445 60	
		75,531 85
Furnace Brook Parkway: —		
Land,	$166,397 77	
Miscellaneous,	176,230 93	
		342,628 70
Nahant Beach Parkway: —		
Land,	$80,940 78	
Miscellaneous,	76,014 13	
		156,954 91
Lynn Fells Parkway: —		
Land,	$40,468 46	
Miscellaneous,	126,368 88	
		166,837 34
Winthrop Parkway: —		
Land,	$49,198 15	
Miscellaneous,	46,698 72	
		95,896 89
Alewife Brook Parkway: —		
Land,	$144,412 27	
Miscellaneous,	10,950 45	
		155,362 72

Charles River Speedway: —		
Miscellaneous,	$521,348 66	
		$521,348 66
Blue Hills Roads: —		
Miscellaneous,	$8,742 06	
		8,742 06
Middlesex Fells Roads: —		
Miscellaneous,	$61,483 68	
		61,483 68
Stony Brook Roads: —		
Miscellaneous,	$37,183 45	
		37,183 45
Lynnway: —		
Land,	$20,500 00	
Miscellaneous,	124,368 29	
		144,868 29
Spy Pond Parkway: —		
Miscellaneous,	$89 04	
		89 04
Old Colony Parkway: —		
Land,	$33,892 95	
Miscellaneous,	20,454 08	
		54,347 03
Woburn Parkway: —		
Land,	$3,958 75	
Miscellaneous,	52,038 32	
		55,997 07
Dedham Parkway: —		
Land,	$8,527 21	
Miscellaneous,	13,077 48	
		21,604 69
Hammond Pond Parkway: —		
Land,	$41,508 97	
Miscellaneous,	4,787 60	
		46,296 57
Quannapowitt Parkway: —		
Miscellaneous,	$700 82	
		700 82
Vose's Grove: —		
Miscellaneous,	$980 08	
		980 08
Wellington Bridge: —		
Miscellaneous,	$105,250 41	
		105,250 41

Neponset Bridge: —		
Miscellaneous,	$858 90	
		$858 90
Arlington Parkway: —		
Miscellaneous,	$4,035 12	
		4,035 12
General expense,		107,090 19
		$5,550,066 94
Sinking fund requirements for 1896,	$3,650 03	
Sinking fund requirements for 1897,	14,057 10	
Sinking fund requirements for 1898,	3,765 08	
Sinking fund requirements for 1899,	15,396 00	
One-half interest,	22,327 68	
		$59,195 89
Total charged to Dec. 1, 1915,		$5,609,262 83
Balance Dec. 1, 1915,		705,632 83
		$6,314,895 66

NANTASKET BEACH LOAN.

Land,	$603,329 57
Miscellaneous,	102,551 93
Total charged to Dec. 1, 1915,	$705,881 50

CHARLES RIVER BASIN LOAN.

Expended from beginning of work to Dec. 1, 1915,	$4,392,000 58

The above amount has been distributed as follows: —

Administration,	$108,025 16
Dam,	1,118,720 27
Lock,	724,142 64
Temporary bridge and approaches,	184,895 36
Drawbridge,	100,371 06
Highway,	55,557 85
Dredging, pile-driving and protection work in Basin,	179,878 85
Broad Canal,	117,251 64
Lechmere Canal,	53,388 87
Boston Embankment,	894,779 82
Boston Marginal Conduit,	635,511 96
Cambridge Marginal Conduit,	99,472 48

Elimination of malarial mosquitoes,	$1,173 68	
Landing piers,	7,667 99	
Float anchorage,	23 90	
Police signal system,	9,850 06	
Improvement of south bank and driveway,	12,580 48	
Maintenance,	88,708 51	
		$4,392,000 58

Respectfully submitted,

GEO. LYMAN ROGERS,
Secretary.

Dec. 1, 1915.

REPORT OF THE ENGINEER.

Hon. WILLIAM B. DE LAS CASAS, *Chairman, Metropolitan Park Commission.*

SIR: — I submit herewith the report of the Engineer for the year ending Nov. 30, 1915, as follows: —

In general the work of the Engineering Department has consisted of making preliminary surveys and studies, the preparation of plans and specifications for all new construction work and the direction and supervision of the actual work, the furnishing of services and supervision for reconstruction, repair and maintenance work in the various divisions, and the making of surveys and plans for acquirement and conveyance of land.

The construction work of importance which has been in progress during the year has been the building of Furnace Brook Parkway from Quincy Shore Reservation to Hancock Street, including the bridge over Black's Creek; the reconstruction of the burned portion of Wellington Bridge; the extension of Mystic Valley Parkway from Main Street to Mystic Avenue, Medford; the excavation of the channel of Aberjona River from Waterfield Street to Mystic Lake, Winchester; the surfacing and finishing of drive along the easterly bank of the Charles River from Brooks Street, Brighton, to Charlesbank Road, Newton; and masonry shore protection work at Nantasket Beach Reservation, Revere Beach Reservation and Winthrop Shore Reservation.

Considerable preliminary work has been done in the preparation of plans, estimates and specifications for work for which funds are available and which is to be undertaken immediately, and also for reports to the Legislature on proposed work. Included in this proposed work are the rebuilding of Neponset Bridge over the Neponset River between Boston and Quincy; construction of North Beacon Street Bridge over the Charles

River between Boston and Watertown; construction of Weston Bridge over the Charles River between Newton and Weston; extension of Woburn Parkway; extension of Winthrop Parkway; construction of West Roxbury Parkway; dredging of the Charles River in Waltham; changes in Ocean Avenue, Revere; and shore protection and extension of Winthrop Shore Drive around Great Head, Winthrop.

Considerable work has been done with funds appropriated by the Legislature for the relief of the unemployed, the most important of which was the widening and straightening of roads in Blue Hills Reservation to make them safe for automobile traffic; construction of Dedham Parkway; subgrading of a portion of the roadway along the westerly bank of the Charles River from Gerry's Landing to Arsenal Street; widening and straightening of roads in Middlesex Fells Reservation; subgrading of the extension of Mystic Valley Parkway around the southerly end of Mystic Lake to Mystic Street, Arlington; resurfacing of sections of Revere Beach Parkway and Charles River Road; and forestry work in Blue Hills Reservation and Middlesex Fells Reservation.

The department has had under its direction the care and operation of the locks, drawbridge and gates of the Charles River Dam; the lock at Cradock Bridge, Mystic River Reservation, Medford; and Wellington Bridge over the Mystic River.

The usual methods for the care and maintenance of the road surfaces by the use of bituminous binders have been employed during the past year.

The cost of conducting the department has been as follows: —

Engineering: —		
Construction: —		
Services,	$19,588 71	
Expenses,	3,390 04	
		$22,978 75
Maintenance: —		
Services,	$11,875 01	
Expenses,	2,171 46	
		14,046 47
Total,		$37,025 22

Details of the work done under the direction and supervision of this department are given under the following sections of parkway and reservation and in the tables appended.

Construction.

Parkways.

Alewife Brook Parkway. — Plans and estimates of cost of construction from Powder House Boulevard to Massachusetts Avenue have been made, and the preparation of construction plans and specifications to obtain bids for the work is in progress.

Dedham Parkway. — Surveys have been made and construction plans prepared for construction from Boyden Square, Dedham, to Stony Brook Reservation. The Parkway is about 1 mile in length, and with the exception of about 600 feet on the Dedham end and about 300 feet on the Stony Brook end, the work of subgrading the main roadway is completed. This work was done principally by forces employed with the emergency fund for the unemployed, $10,800 of which was apportioned for this work. Surveys and plans for additional takings have been made.

Furnace Brook Parkway. — The work of constructing the Parkway from Quincy Shore Reservation to Hancock Street, a distance of about 1¾ miles, has been in progress during the year and is nearly completed.

On March 22, 1915, the following proposals were received for the work of subgrading: —

Jeremiah Sullivan, Cambridge,	$111,630 00
D. M. Biggs & Co., Boston,	107,570 00
George T. Rendle Company and Rendle & Stoddard, East Boston,	97,250 00
J. P. O'Riorden, Charlestown,	94,505 00
Nathan S. Brock, Brookline,	94,450 00
Richmond F. Hudson, Melrose,	94,025 00
John R. Burke, Boston,	92,880 00
Clark & Gore, Dorchester,	91,100 00
West Roxbury Trap Rock Company, West Roxbury,	90,250 00
Middlesex Contracting Company, Framingham,	88,950 00
Farrell & Loud, Somerville,	87,023 33

Caputo & Giovannini, Boston,	$86,300 00
A. Williams & Co., Boston,	83,000 00
Antonio G. Tomasello, Dorchester,	82,275 00
Hugh Nawn Contracting Company, Roxbury,	80,450 00
H. P. Converse & Co., Boston,	78,850 00
Peter Bompiani & Co., Boston,	75,780 00
Dennis F. Crowley, East Milton,	75,335 00
Coleman Brothers, Boston,	70,875 00
Rowe Contracting Company, Boston,	70,850 00
James H. Fannon, Somerville,	69,650 00
Perini Construction Company, Ashland,	67,000 00
John Cashman & Sons Company, Boston,	63,700 00

The contract was awarded to the lowest bidder, John Cashman & Sons Company, and the work begun on April 22, 1915.

Plans and specifications have been prepared for the construction of a bridge for this section of the Parkway over Black's Creek. The bridge is to be built of masonry, with granite-faced, U-shaped abutments and reinforced concrete girder superstructure. It is to be of one span of 40 feet and 54 feet in width. On Aug. 10, 1915, the following proposals were received for the construction of this bridge: —

Henry Spinach Contracting Company, Boston,	$33,856 90
John P. Cavanagh Company, Dorchester,	27,874 00
Coleman Brothers, Chelsea,	26,000 00
Bay State Dredging Company, Ltd., Boston,	25,500 00
Lawler Brothers, Charlestown,	25,333 00
Hugh Nawn Contracting Company, Roxbury,	24,900 00
William L. Miller Company, Charlestown,	18,842 00

The lowest bidder requested permission to withdraw his bid, presenting evidence of an error in his estimates, and the contract was awarded to the next lowest bidder, the Hugh Nawn Contracting Company. The work was begun on Oct. 11, 1915, and is now in progress.

The cost of the construction of the Parkway and bridge over Black's Creek to Dec. 1, 1915, as certified by this department, has been as follows: —

Contract No. 175, construction of parkway: —			
Year ending Nov. 30, 1914: —			
Engineering services, preliminary,		$179 99	
Engineering expenses,		32 60	
			$212 59
Year ending Nov. 30, 1915: —			
Contract estimates,		$43,086 01	
Engineering services: —			
Preliminary,	$437 57		
Actual,	1,965 34		
		2,402 91	
Engineering expenses,		401 21	
			45,890 13
Total,			$46,102 72
Contract No. 180, construction of bridge: —			
Contract estimates,		$4,200 00	
Engineering services: —			
Preliminary,	$257 06		
Actual,	349 97		
		607 03	
Engineering expenses,		368 08	
Total,			$5,175 11
Grand total,			$51,277 83

Survey and plan have been made for the conveyance of land of the Adams estate.

Middlesex Fells Parkway. — The work of reconstructing the burned portion of Wellington Bridge, which was begun on Sept. 2, 1914, was entirely completed on May 15, 1915. The work under contract for stone masonry piers, with Rendle & Stoddard, was completed March 10, 1915. The work of building the center portion of the reinforced concrete superstructure, under contract with Coleman Brothers, was completed so as to allow passage of electric cars on Jan. 30, 1915, and the whole of the superstructure practically completed and opened to public travel of all kinds on May 1, 1915. The work of repairing drawbridge, under contract with the Boston Bridge Works, was completed on March 3, 1915, and the work of building draw landing and fender piers, under contract with Rendle & Stoddard, was completed on March 10, 1915. The total cost of the whole work, as certified by this department, has been as follows: —

Contract No. 165, removal of old bridge, building temporary bridge and stone masonry piers: —				
Previously reported: —				
Contract estimates, . .		$26,859 20		
Additional labor and materials,		267 50		
Engineering services: —				
Preliminary,	$114 18			
Actual, .	1,335 74			
		1,449 92		
Engineering expenses, . .		51 72		
			$28,628 34	
Year ending Nov. 30, 1915: —				
Contract estimates, . .		$18,625 06		
Additional labor and materials, ...		314 85		
Engineering services, actual,		488 65		
Engineering expenses, . .		15 29		
			19,443 85	
Total, ...				$48,072 19
Repairs to steel draw: —				
Previously reported: —				
Labor and materials, . .		$5,847 17		
Engineering services: —				
Preliminary, .	$22 13			
Actual, . .	71 66			
		93 79		
Engineering expenses, . .		22 69		
			$5,963 65	
Year ending Nov. 30, 1915: —				
Labor and materials, . .		$3,177 96		
Engineering services, actual,		92 94		
Engineering expenses, . .		3 51		
			3,274 41	
Total, ...				9,238 06
Contract No. 170, superstructure: —				
Previously reported: —				
Contract estimates, . .		$7,500 00		
Additional labor and materials, ...		267 51		
Engineering services: —				
Preliminary, .	$322 73			
Actual, . .	92 63			
		415 36		
Engineering expenses, . .		160 28		
			$8,343 15	

Year ending Nov. 30, 1915: —			
Contract estimates, . .	$40,360 48		
Additional labor and materials, ...	1,541 67		
Engineering services, actual,	932 39		
Engineering expenses, . .	95 62		
		$42,930 16	
Total, ...			$51,273 31
Contract No. 172, draw landing and fender piers: —			
Year ending Nov. 30, 1914: —			
Engineering services, preliminary, . .		$21 00	
Year ending Nov. 30, 1915: —			
Contract estimates, . .	$6,114 01		
Additional labor and materials, ...	16 77		
Engineering services, actual,	321 74		
Engineering expenses, . .	5 52		
		6,458 04	
Total, ...			6,479 04
Removal of temporary footbridge, including draw: —			
Labor, ...		$150 00	
Engineering services: —			
Preliminary, . .	$3 75		
Actual, . . .	2 40		
		6 15	
Total, ...			156 15
Grand total, ...			$115,218 75

Water service for fire protection has been installed on Wellington Bridge. One hydrant has been placed on the shore at each end of the bridge and a 4-inch main with hose connections every 100 feet placed in the easterly sidewalk of the southerly or wooden portion of the bridge. Fire hose and hose carriage have been provided and small house for storage of hose carriage located on shore at southerly end. The cost of this work has been $1,482.74.

Mystic Valley Parkway. — Plans and specifications have been prepared and the work of grading and surfacing Mystic Valley Parkway from Main Street to Mystic Avenue, Medford, has been completed. On Feb. 9, 1915, the following proposals were received for this work: —

M. Russo & Son Company, Boston,	$80,423 50
Joseph McCormick, East Providence, R.I.,	77,064 00
John Landis, Boston,	76,347 50
George T. Rendle Company and Rendle & Stoddard, Boston,	75,860 00
Lawler Brothers, Charlestown,	73,337 00
Susi & Williams, Boston,	70,610 00
Michael D. Russo, Boston,	69,361 75
William R. Farrell, Allston,	69,332 10
John P. Cavanagh Company, Dorchester,	65,780 00
Peter Bompiani & Co., West Quincy,	63,511 40
Middlesex Contracting Company, Framingham,	63,409 50
Hugh Nawn Contracting Company, Roxbury,	62,808 50
B. Perini & Co., Ashland,	57,601 50
William J. McCarthy Company, Somerville,	57,447 50
John Cashman & Sons Company, Boston,	56,923 50
William B. Mullen, Belmont,	55,715 00
Timothy A. Moynihan, South Hamilton,	55,515 00
Charles A. Kelley, Somerville,	51,241 50
Rowe Contracting Company, Brighton,	51,077 00
James H. Fannon, Somerville,	48,743 00
Richmond F. Hudson, Melrose,	46,817 50
Coleman Brothers, Boston,	43,780 00

The contract was awarded to the lowest bidders, Coleman Brothers, and the work begun on Feb. 17, 1915, and completed Sept. 8, 1915. The total cost of the work, as certified by this department, has been as follows: —

Contract No. 174: —			
Years ending Nov. 30, 1913, and Nov. 30, 1914: —			
Engineering services, preliminary,		$319 35	
Engineering expenses,		119 87	
			$439 22
Year ending Nov. 30, 1915: —			
Contract estimates,		$55,235 73	
Additional labor and materials,		1,633 94	
Engineering services: —			
Preliminary,	$111 08		
Actual,	1,524 60		
		1,635 68	
Engineering expenses,		324 08	
			58,829 43
Total,			$59,268 65

Incidental to this work it was necessary to build a storage house for the stop-planks and tools used at the boat-lock and dam in Mystic River, and a locktender's house. The storage house was built of brick and located on land owned by the Commonwealth just outside the line of the Parkway. The locktender's house was built of wood and located on the lock wall, with the electrical equipment and controllers for operating the lock-gates installed therein. The following proposals were received for building these two houses on Aug. 31, 1915: —

	Locktender's House.	Storage House.	Totals.
Walter D. Edwards, Arlington Heights,	$461 00	$3,100 00	$3,561 00
F. F. Jonsberg Company, Boston,	554 00	2,805 00	3,359 00
Edward P. Hall, Ballardvale,	593 00	2,075 00	2,668 00
Apted & McDuffee, Malden,	475 00	1,875 00	2,350 00

The contract was awarded to the lowest bidders, Apted & McDuffee, the work was begun on Sept. 14, 1915, and completed on Nov. 15, 1915. The total cost of this work, as certified by this department, has been as follows: —

Contract No. 181: —			
Contract estimates,		$2,350 00	
Additional labor and materials,		38 63	
Engineering services: —			
Preliminary,	$32 25		
Actual,	100 03		
		132 28	
Engineering expenses,		11 95	
Total,			$2,532 86

On Aug. 17, 1915, the following proposals were received for building about 1,150 lineal feet of galvanized-iron fence on the river wall along the parkway from Main Street to Mystic Avenue: —

Norfolk Iron Company, Norfolk Downs, Quincy,	$3,668 50
Vulcan Rail and Construction Company, Boston,	3,312 00
W. A. Snow Iron Works, Inc., Boston,	3,208 50
Smith & Lovett Company, Boston,	3,128 00
A. Johanson & Co., South Boston,	2,873 85

As the lowest bidders did not qualify, the contract was awarded to Smith & Lovett, and the work is now in progress.

Plans and specifications have been prepared for work of excavating the channel of the Aberjona River from Waterfield Street to Upper Mystic Lake, Winchester. The total length of river to be excavated is about 4,000 feet. This work will provide a channel with a maximum width of 40 feet at the water line and an average depth of water of 5 feet. On July 26, 1915, the following proposals were received for this work: —

Lawler Brothers, Charlestown,	$33,000 00
John P. Cavanagh Company, Dorchester,	26,250 00
Bay State Dredging Company, Ltd., Boston,	20,850 00
Eastern Dredging Company, East Boston,	13,725 00
William R. Farrell, Somerville,	13,650 00
Coleman Brothers, Chelsea,	13,500 00

The contract was awarded to the lowest bidders, Coleman Brothers, and work was begun on Aug. 30, 1915, and is now in progress. The cost of the work to Dec. 1, 1915, as certified by this department, has been as follows: —

Contract No. 178: —			
Contract estimates,		$2,970 00	
Engineering services: —			
Preliminary,	$188 77		
Actual,	230 80		
		419 57	
Engineering expenses,		191 03	
Total,			$3,580 60

Plans have been prepared and a conveyance of the land along the southerly shore of the Lower Mystic Lake has been made by the town of Arlington to the Commonwealth. The work of subgrading a portion of this proposed drive, from the Mystic Valley Parkway at Medford Street to Mystic Street, has been done by forces employed with the emergency fund for the unemployed, of which $4,000 was apportioned for the work. The filling material was donated by the town of Arlington, through its cemetery trustees.

Nahant Beach Parkway. — A section of the shore 75 feet by

120 feet, north of the driveway, near the bath-house, has been surfaced with concrete to provide a parking space for automobiles.

A plan of Nahant Road has been prepared to accompany transfer from the town of Nahant for care and control.

Old Colony Parkway. — The work of preparing plans for the reconstruction of Neponset Bridge over the Neponset River between Boston and Quincy is in progress, and it is expected to advertise for bids early next year. It is proposed to construct a superstructure of reinforced concrete girders on stone masonry piers. The bridge is to be about 732 feet long and 61 feet in width, with a draw opening of 50 feet. The estimated cost of the work is about $350,000.

Quannapowitt Parkway. — Surveys have been made and option plans and taking plans have been prepared for a driveway around the northerly end of Lake Quannapowitt, Wakefield.

Winthrop Parkway. — Surveys have been made and plans prepared for taking and conveyance of land for extension of Winthrop Parkway from its present ending at Ocean Avenue to the southerly end of Short Beach, Revere.

Woburn Parkway. — Surveys have been made and plans and estimates have been prepared for the extension of Woburn Parkway from its present ending at Pond Street to the Mystic Valley Parkway, Winchester.

Reservations.

Blue Hills Reservation. — Certain of the roads through the Blue Hills Reservation from Hillside Street to Furnace Brook Parkway have been widened and straightened to make them safe for automobile traffic, and were opened to automobile traffic on Sept. 17, 1915. This provides a direct route easterly and westerly from the end of Blue Hills Parkway in Milton by way of Unquity Road to Hillside Street, Border Road to Randolph Avenue, Administration Road and Wampatuck Road to Furnace Brook Parkway. The work has been done by forces employed with the emergency fund for the unemployed, of which $10,887.92 was apportioned for this work. Although these roads are not finished with a hard surface, the natural material found along the route, after being surface

treated with asphaltic oil, provides a good summer road. This class of road surface is, however, affected by the frosts and is not suited to automobile traffic during the winter months.

Charles River Reservation, Upper Division. — The work of installing ornamental features on the Anderson Bridge has been completed and the bridge turned over to the care and control of the Boston and Cambridge Bridge Commission.

Plans, specifications and estimates have been prepared for construction of the bridge over the Charles River at North Beacon Street, Boston and Watertown. The bridge is to be constructed of reinforced concrete, and will consist of three arches, the center arch of a span of 74.5 feet and two side arches of a span of 60 feet each. The total length of the bridge over all will be about 375 feet, and the total width 75 feet. On Nov. 22, 1915, the following proposals were received for the construction of this bridge: —

William Crane, Cambridge,	$183,738 00
The T. A. Gillespie Company, New York City, N. Y.,	172,875 00
James J. Coughlin Company, Boston,	169,857 50
Hugh Nawn Contracting Company, Roxbury,	154,882 50
Central Construction Company, Roxbury,	151,160 00
William J. Barry, Boston,	142,520 00
Rowe Contracting Company, Boston,	134,805 00
T. Stuart & Son Company, Newton,	130,575 00
Bay State Dredging and Contracting Company, Boston,	129,746 50
H. P. Converse & Co., Boston,	128,091 10
Coleman Brothers, Chelsea,	124,011 00
Fred T. Ley & Co., Inc., Springfield,	119,560 00
A. G. Tomasello, Dorchester,	117,352 50

The contract was awarded to A. G. Tomasello, the lowest bidder, and preparations are being made to begin the work as early in the spring as the weather permits. It is expected that the filling of the approaches will proceed during the winter months.

The work of subgrading a portion of the roadway along the westerly shore of the Charles River from Gerry's Landing to Arsenal Street has been done by forces employed with the emergency fund for the unemployed, $8,096.64 of which was apportioned for this work. A fill has been made along the

marshes of a total length of 6,500 feet and of a width of 20 feet, which provides a walk through this section and will later be used as a portion of the driveway in the final development.

The work of making surveys, studies, plans and estimates for the construction of a new bridge at the site of the old Weston Bridge across the Charles River at Commonwealth Avenue, Newton and Weston, is in progress, and it is expected to begin this work early in the spring of next year.

Plans and specifications have been prepared for finishing and surfacing the roadway along the easterly bank of the Charles River from Brooks Street, Brighton, to Charlesbank Road, Newton. On Sept. 7, 1915, the following proposals were received for the work: —

A. G. Tomasello, Dorchester,	$33,843 00
Hugh Nawn Contracting Company, Roxbury,	28,400 00
T. Stuart & Son Company, Newton,	27,737 00
A. E. Daddario & Co., Mattapan,	27,518 00
Coleman Brothers, Chelsea,	27,290 00
Peter J. O'Malley, Waltham,	26,582 20
Middlesex Construction Company, Boston,	25,590 00
Charles A. Kelley, Somerville,	22,860 00
James H. Fannon, Somerville,	22,644 00
J. C. Coleman & Sons Company, Boston,	22,635 00
J. H. Sullivan Company, Brighton,	21,715 00
John J. Martin, Watertown,	21,533 00
Rowe Contracting Company, Boston,	21,040 00

The contract was awarded to the lowest bidder, the Rowe Contracting Company, the work was begun on Sept. 15, 1915, and it is nearly completed. The cost of the work to Dec. 1, 1915, as certified by this department, has been as follows: —

Contract No. 183: —			
Contract estimates,		$18,172 50	
Additional labor and materials,		459 72	
Engineering services: —			
Preliminary,	$348 87		
Actual,	660 86		
		1,009 73	
Engineering expenses,		290 73	
Total,			$19,932 68

Plans and specifications have been prepared for the work of excavating the section of the Charles River between Elm Street and Bleachery Dam, Waltham, to deepen the water and remove the exposed flats, for sanitary improvement of this section. On Sept. 21, 1915, the following proposals were received for the work: —

William L. Miller Company, Charlestown,	$20,100 00
Coleman Brothers, Chelsea,	15,000 00
Bay State Dredging and Contracting Company, Boston,	14,685 00
John P. Cavanagh Company, Dorchester,	14,550 00
Eastern Dredging Company, East Boston,	14,167 50
John R. Burke, Boston,	14,100 00

The contract was awarded to John R. Burke, the lowest bidder, and the work of constructing a special dredging plant at the location is in progress and is nearly completed. It is expected that the actual work of excavation will be begun soon.

Middlesex Fells Reservation. — Considerable work of widening and straightening has been done on Forest and Maine streets, the principal thoroughfares through the Reservation in Medford and Stoneham, for the improvement of some of the sections which were dangerous for the large amount of automobile traffic. The work was done partly by contract and partly by forces employed with the emergency fund for the unemployed, $11,000 of which was apportioned for this work. The contract work was for the drilling and blasting of the ledges encountered. The work consisted principally of the removal of ledge at the sharp turns.

Emerson Street Border Road has also been widened, the work being done by forces employed with the emergency fund for the unemployed, from which $4,000 was apportioned for this work.

The electric railway terminus and principal landing in the Reservation has been transferred from a point near the Brooks Road Bridge to a point near the recreation grounds in the section known as the "Sheepfold." The work of grading the land, reconstructing the tracks, etc., in connection with this change has been done by the Boston Elevated Railway Com-

pany and the Bay State Street Railway Company. On account of this change and the possibility of more extensive use of the recreation grounds, it has become necessary to provide a water supply for this section. A supply pipe has been laid from the metropolitan main at the corner of Main and South streets, Stoneham, a distance of about 5,500 feet, to the recreation grounds. This service pipe is laid at only a slight depth below the surface, and is not available for winter supply.

Estimates have been made for widening and straightening South Border Road, to make it safe for automobile traffic.

Nantasket Beach Reservation. — Plans and specifications have been prepared for the construction of concrete bulkhead and retaining walls along the southerly end of the Reservation and under the bath-house. On May 19, 1915, the following proposals were received for the work: —

Burke Brothers, Dorchester,	$9,500 00
Simpson Brothers Corporation, Boston,	9,132 00
Coleman Brothers, Chelsea,	8,050 00
Rowe Contracting Company, Malden,	6,650 00
W. A. Murtfeldt Company, Boston,	6,634 00
John Cashman & Sons Company, Boston,	6,625 00
Hugh Nawn Contracting Company, Roxbury,	5,675 00

The contract was awarded to the Hugh Nawn Contracting Company, work was begun on May 26, 1915, and completed July 31, 1915. In connection with this work certain other sea walls were constructed between the hotel and bath-house, making a continuous permanent shore protection from the southerly end of the hotel to the southerly limits of the Reservation, a distance of about 1,500 feet. The total cost of this work, as certified by this department, has been as follows: —

Contract No. 176: —			
Contract estimates,		$8,273 53	
Additional labor and materials,		620 42	
Engineering services: —			
Preliminary,	$53 16		
Actual,	437 03		
		490 19	
Engineering expenses,		39 75	
Total,			$9,423 89

Concrete retaining walls have been constructed under and adjoining the merry-go-round, at the northerly end of the Reservation, with the purpose in view of reconstructing the platforms in this vicinity with a permanent granolithic surface, to replace the old and unsafe wooden construction.

Quincy Shore Reservation. — Work of cleaning and grading the beach, and removing mud and peat from the section of the beach between Appleton Street and Beach Street, has been done by contract. Tools, equipment and labor have been furnished by John Cashman & Sons Company, and the total amount expended on this work has been $2,035.88.

Revere Beach Reservation. — The work of constructing shore protection at the northerly end of Revere Beach Reservation, which was suspended on account of unfavorable weather last fall, was completed on May 15, 1915. This shore protection work was of a new type for this section, being in the form of steps or ramps, following the general slope of the beach and built of reinforced concrete. The work extended for about 1,500 feet in length of shore, and was 30 feet in width. The total cost of the work, as certified by this department, has been as follows: —

Contract No. 166: —			
Year ending Nov. 30, 1914: —			
Contract estimates,		$17,899 40	
Additional labor and materials,		2,607 45	
Engineering services: —			
Preliminary,	$52 85		
Actual,	761 85		
		814 70	
Engineering expenses,		296 51	
			$21,618 06
Year ending Nov. 30, 1915: —			
Contract estimates,		$3,387 67	
Additional labor and materials,		508 40	
Engineering services, actual,		279 46	
Engineering expenses,		54 36	
			4,229 89
Total,			$25,847 95

Plans and specifications have been prepared for the construction of practically the same type of shore protection as

above described between the bath-house and Revere Street shelters. On Aug. 31, 1915, the following proposals were received: —

V. Grande, Boston,	$33,880 00
Charles Lopilato & Co., Revere,	31,225 00
Michael Russo & Co., Boston,	29,958 00
Simpson Brothers Corporation, Boston,	29,003 00
Albert I. Berry, Boston,	28,965 00
Hugh Nawn Contracting Company, Roxbury,	25,090 00
George M. Bryne, Boston,	23,820 00
Rowe Contracting Company, Boston,	21,077 00
Alco Contracting Company, Boston,	20,966 00
A. G. Tomasello, Dorchester,	20,590 00
James H. Fannon, Somerville,	20,290 00
Middlesex Contracting Company, Boston,	19,970 00
Coleman Brothers, Chelsea,	19,853 80

The contract was awarded to Coleman Brothers, the lowest bidders, and the work was begun on Sept. 13, 1915, and is now practically completed. In connection with this work it was necessary to relay water pipe in the easterly walk and to lay additional granolithic surfacing on the outside promenade. The total cost of the work to Dec. 1, 1915, as certified by this department, has been as follows: —

Contract No. 182: —			
Contract estimates,		$18,375 00	
Relaying water pipe in easterly walk,		1,931 70	
Additional granolithic surfacing on outside promenade,		531 00	
Additional labor and materials,		42 10	
Engineering services: —			
Preliminary,	$279 37		
Actual,	700 29		
		979 66	
Engineering expenses,		301 45	
Total,			$22,160 91

A portion of the easterly promenade along the concrete shore protection, constructed last year at the northerly end of the Reservation, has been surfaced with bituminous material to prevent washing out in times of severe storm. The total cost of this work was $906.45.

In connection with the work of constructing new boiler house and plant at the rear of the bath-house, services have been furnished by this department for the inspection of the work of the builder, and a contract for the construction of a new radial brick chimney has been made with the Alphons Custodis Chimney Construction Company, at a cost of $1,900. The work of building the chimney will probably not be done until spring.

Plans and estimates have been prepared for the widening of Ocean Avenue and for construction of Baker Avenue and relocation of street railway tracks, to accompany report to the Legislature of special Joint Board consisting of the Metropolitan Park Commission and the Massachusetts Highway Commission.

Winthrop Shore Reservation. — The work of constructing a sea wall at the northerly end of the Reservation, which was in progress at the time of the last report, has been completed. This wall is built with granite facing and concrete backing. The contract was with Caputo & Giovannini, and work was begun on Oct. 5, 1914, and completed Feb. 13, 1915. The total length of wall built was about 800 feet, with an average height of 12 feet above the beach. Severe storms were encountered during the progress of the work, which delayed its completion to some extent. The total cost of the work, as certified by this department, has been as follows: —

Contract No. 169: —			
Year ending Nov. 30, 1914: —			
Contract estimates,		$9,647 32	
Engineering services: —			
Preliminary,	$88 43		
Actual,	437 48		
		525 91	
Engineering expenses,		224 71	
			$10,397 94
Year ending Nov. 30, 1915: —			
Contract estimates,		$15,385 16	
Engineering services, actual,		626 15	
Engineering expenses,		28 78	
			16,040 09
Total,			$26,438 03

Surveys and estimates have been made for the construction of a sea wall around Great Head for the protection of the shore. On account of the fact that no action has been taken by the town, accepting the act requiring it to pay a portion of the cost, no work has been commenced.

Maintenance.

Parkways.

Lynn Fells Parkway. — Surveys and plans have been made for changes in layout at the junction of Parkway, Emerson Street Border Road and North Border Road.

Revere Beach Parkway. — Sections of the driveway of the Parkway from Washington Avenue to Webster Avenue, from Webster Avenue to Borden Street and from Stowers Court to Winthrop Avenue have been reconstructed and resurfaced. This work was necessary on account of poor subgrade, which was affected by the frost, making it difficult to maintain the road in good condition during a portion of the year. This work was done partly by contract and partly by forces employed with funds for the relief of the unemployed. Details of the cost of the work are given in the appended table No. 2.

For the purpose of diminishing the danger at the crossing of the Parkway and Everett Avenue, changes have been made in the layout of the roadways of the Parkway. The cost of the work was $1,380.15.

Reservations.

Beaver Brook Reservation. — The high land at the corner of Trapelo Road and Quince Street has been graded to provide a better view at this corner, for the safety of traffic.

Charles River Reservation, Lower Basin Section. — The work for the care, maintenance and operation of the locks, drawbridge and sluices at Charles River Dam has been supervised, and necessary repairs and overhauling of boiler plant and electrical equipment made.

A portable centrifugal pump for use in cases of emergency or breakdowns in stationary pumps in sump wells has been purchased.

The channels in the Lower Basin Section have been kept clear of ice during the winter season, and bids have been re-

REVERE BEACH RESERVATION. — **Shore Protection, looking from Revere Street Shelter toward Bath House.**

ceived for this work for the winter season of 1915–16. The lowest bidder is the company that did the work in 1914–15, the Boston Sand and Gravel Company, and the price of the new contract is $7.50 per hour.

Considerable repairs have been made to the granolithic of the promenade along the Embankment, which has been damaged by settlements of the fill.

The work of finishing and grading slopes of fill along the river bank between Cottage Farm Bridge and Cambridge Street, which was required by the United States engineers, has been done by forces employed with emergency fund for the unemployed, from which fund $1,000 was apportioned for this work.

Charles River Reservation, Upper Division. — Considerable grading of the land has been done in the vicinity of the southerly end of Weston Bridge for site of new band stand.

The half-mile circular track on Charles River Speedway has been regraded at the turns to restore the proper elevations, which had been flattened by bad settlements.

The work of widening Forest Grove Road at the causeway has been done. The roadway at this point was wide enough for only one line of traffic.

A portion of Charles River Road, from Irving Street to Riverside Avenue, has been reconstructed and resurfaced. This portion of the roadway was difficult to maintain on account of poor subgrade.

In accordance with the orders of the State Board of Health, a new water supply and sewerage system have been installed at the Riverside Recreation Grounds. Wells have been driven for the water supply, and the sewerage system has been constructed to connect with the Newton sewer on the northerly side of the river. The cost of this work has been $2,642.85.

The Boston & Albany Railroad Company has submitted plans for the reconstruction of its bridge over the Charles River at Riverside, for the approval of this Commission, and the same have been approved.

Revere Beach Reservation. — Repairs have been made to granolithic walks in the Reservation where they have been damaged by settlements or expansion.

General.

The work of repairs and maintenance of roadways in the parkways and reservations and the work of bituminous treatments have been done under the supervision of this department. Engineering services have been furnished for this and other maintenance work. A record of road repairs is given in appended table.

The bridges under the care and control of this Commission have been inspected twice during the year and report made to the Secretary, with recommendations and estimates for necessary repairs.

Plans have been made from time to time for land conveyances.

Two hundred and four permits have been issued to cities, towns, corporations and individuals for work in the parkways and reservations, and their work has been supervised and inspected by this department at a cost of $877.58.

Recommendation has been made for the construction in the various divisions of concrete fence posts, and molds have been supplied with which it is intended to make up as many as possible during the dull season, for use in replacing the fast decaying wooden structures.

The following tables are appended to this report: —

Table 1. — Data relating to Metropolitan Park System.
Table 2. — Summary of cost of road repairs and maintenance.

Respectfully submitted,

JOHN R. RABLIN,
Engineer.

Dec. 1, 1915.

TABLE 1. — DATA RELATING TO METROPOLITAN PARK SYSTEM.

Areas of Reservations and Parkways.

	Acres.	
Reservations: —		
Blue Hills,	4,906.43	
Middlesex Fells,	1,898.09	
Stony Brook,	463.72	
Beaver Brook,	58.33	
Hart's Hill,	22.97	
Hemlock Gorge,	23.06	
Charles River,	710.33	
Mystic River,	290.68	
Neponset River,	922.59	
King's Beach and Lynn Shore,	22.69	
Revere Beach,	64.99	
Winthrop Shore,	16.83	
Quincy Shore,	37.59	
Nantasket Beach,	25.59	
Total,		9,463.89
Parkways: —		
Hammond Pond,	94.63	
Blue Hills,	83.58	
Old Colony,	55.89	
Woburn,	23.24	
Middlesex Fells,	82.12	
Revere Beach,	126.93	
Mystic Valley,	99.71	
Neponset River,	74.11	
Fresh Pond,	12.40	
Lynn Fells,	7.72	
Furnace Brook,	94.03	
Nahant Beach,	81.98	
Lynnway,	5.15	
Winthrop,	5.85	
Dedham,	34.87	
Alewife Brook,	140.26	
West Roxbury,	72.37	
Total,		1,094.84
Grand total, reservations and parkways,		10,558.73

Lengths of Formal Roads constructed.

Reservations: —	Double Roadways (Miles).	Single Roadways (Miles).	Total Miles.
Charles River,	–	4.84	
Lynn Shore,	–	.96	
Quincy Shore,	–	2.24	
Revere Beach,	–	2.70	
Stony Brook,	–	2.34	
Winthrop Shore,	–	1.07	
			14.15
Parkways: —			
Blue Hills,	1.46	1.61	
Fresh Pond,	–	.50	
Furnace Brook,	–	1.47	
Lynn Fells,	–	1.05	
Lynnway,	–	.68	
Middlesex Fells,	4.10	1.77	
Mystic Valley,	–	5.50	
Nahant Beach,	–	2.52	
Neponset River,	–	.53	
Revere Beach,	1.45	3.73	
Winthrop,	–	.49	
Woburn,	–	1.38	
			21.23
	7.01*		
* Equivalent in miles of single roadway,			14.02

Highways transferred by or taken from cities and towns: —	Miles.	
Blue Hills Reservation,	1.23	
Middlesex Fells Reservation,	6.63	
Nantasket Beach Reservation,	.71	
Nahant Beach Parkway,	2.05	
		10.62
Grand total,		60.02

All above roads open to automobile traffic.

Lengths of Carriage Roads in Reservations.

	Miles.
Blue Hills Reservation,	29.74
Middlesex Fells Reservation,	17.50
Stony Brook Reservation,	1.60
Beaver Brook Reservation,	.22
Charles River Reservation,	3.70
Total,	52.76

Of the above roads 10 miles are open to automobile traffic.

Lights in Parkways and Reservations.

	Lights.
Blue Hills Parkway (Welsbach gas),	80
Furnace Brook Parkway (Welsbach gas),	43
Middlesex Fells Parkway (Welsbach naphtha),	261
Middlesex Fells Reservation (Welsbach naphtha),	41
Middlesex Fells Reservation (electric),	48
Mystic Valley Parkway (Welsbach naphtha),	160
Lynn Fells Parkway (Welsbach naphtha),	33
Nantasket Beach Reservation (electric),	23[1,2]
Winthrop Parkway (Welsbach naphtha),	11
Winthrop Shore Reservation (electric),	7
Nahant Beach Parkway (electric),	7[3]
Lynn Shore Reservation (electric),	28
Lynnway (electric),	17
Charles River Reservation, Speedway Section (Welsbach naphtha),	69[4]
Revere Beach Parkway (Welsbach naphtha),	169
Revere Beach Parkway (electric),	1
Fresh Pond Parkway (electric),	15
Quincy Shore Reservation (Welsbach gas),	56
Quincy Shore Reservation (electric),	2
Revere Beach Reservation (Welsbach naphtha),	36
Revere Beach Reservation (Welsbach gas),	52
Revere Beach Reservation (electric),	16[5]
Charles River Reservation, Boston Embankment (electric),	104
Charles River Reservation, Lower Basin, Dam and Lock (electric),	15
Woburn Parkway (Welsbach naphtha),	31
Total,	1,325

[1] Six additional lights in summer.
[2] Three additional lights in summer south of bath-house near wall.
[3] Five additional lights in summer.
[4] Three electric lights in yard at administration building.
[5] Three hundred and ninety-five additional lights in summer.

Miles of Seashore.

	Miles.
Lynn Shore,	1.50
Nahant Beach,	3.92
Revere Beach,	2.74
Winthrop Shore,	1.20
Nantasket Beach,	1.02
Quincy Shore,	2.19
Total,	12.57

Lengths of Sea Walls.

	Miles.
Lynn Shore,	1.30
Revere Beach, at Northern Circle,	.08
Revere Beach, at Eliot Circle,	.15
Revere Beach, shore protection, bath-house shelter to Revere Street shelter,	.29
Revere Beach, shore protection south of Northern Circle,	.28
Winthrop Shore, bridge to Great Head,	1.04
Winthrop Shore, bridge to Grover's Cliff,	.23
Quincy Shore Reservation, southerly end,	.15
Nantasket Beach Reservation,	.28
Total,	3.80

Miles of River Bank.

	Miles.
Charles River,	28.13
Mystic River,	8.16
Neponset River,	15.86
Alewife Brook,	4.50
Total,	56.65

Bridges.

Reinforced concrete bridges,	8
Steel bridges,	9
Wooden bridges,	5 [1]
Drawbridges,	5
Footbridges,	11
Total,	38

[1] One-half of Wellington Bridge rebuilt with concrete girders.

Culverts.

Reinforced concrete and other masonry culverts,	22

Dams.

Beaver Brook Reservation, small wooden dams,	2
Charles River Reservation, Charles River Basin Tidal Dam, 1,200 feet in length,	1
Charles River Reservation, reinforced concrete dam at Washington Street, Newton Lower Falls, 200 feet in length,	1
Hemlock Gorge Reservation, small reinforced concrete dam on East Branch of river, Newton Upper Falls,	1
Hemlock Gorge Reservation, reinforced concrete dam in Charles River at Boylston Street, Newton Upper Falls, 90 feet in length,	1
Mystic River Reservation, reinforced concrete tidal dam at Cradock Bridge, 100 feet in length; weirs, 400 feet in length,	1
Total,	7

Lock-gates, Sluice-gates and Tide-gates.

Charles River Reservation, Charles River Basin Tidal Dam, 6 lock-gates, 13 sluice-gates, 43 tide-gates.
Mystic River Reservation, Cradock Bridge Tidal Dam, 2 lock-gates, 4 sluice-gates, 8 tide-gates.
Quincy Shore Reservation, 8 tide-gates.
Revere Beach Parkway, 1 tide-gate.

Police Signal System.

	Miles.
Blue Hills Division,	30
Middlesex Fells Division,	18½
Nantasket Beach Division,	2½
Charles River Reservation,	10
Fresh Pond Parkway,	½
Total,	61½

Revere Beach Division Police Signal System, serving 11 miles of parkways and reservations, on wires leased from New England Telephone and Telegraph Company.

Buildings.

	Blue Hills.	Middlesex Fells.	Revere Beach.	Charles River Reservation.		Nantasket Beach.	Beaver Brook.	Totals.
				Lower Basin.	Upper Division.			
Police stations,	1	1	2	–	2	1	–	7
Substations,	5	2	3	1	1	–	–	12
Separate work, headquarters,	–	1	1	–	–	–	–	2
Stables,	5	3	2	1	3	1	1	16
Superintendents' houses,	1	–	1	–	2	–	1	5
Dwellings,	10	6	–	–	4	2	–	22
Garages,	4	1	2	1	1	1	–	10
Carpenter shops,	1	1	1	–	1	–	–	4
Paint shops,	–	1	1	1	–	1	–	4
Other shops,	–	3	2	–	4	1	–	10
Sheds,	1	6	3	1	1	–	–	12
Miscellaneous,	2	11	3	5	4	5	2	32
Band stands,	1	2	3	1	8	1	1	17
Shelters,	–	1	4	1	1	1	1	9
Refectories,	2	–	–	1	–	1	–	4
Hotel,	–	–	–	–	–	1	–	1
Sanitaries,	3	6	2	1	4	6	1	23
Boathouses,	–	–	1	1	6	–	–	8
Bath-houses,	3	2	2	–	3	1	–	11
Laundries,	–	–	1	–	–	1	–	2
Coal bin,	–	–	–	–	–	1	–	1
								212[1]

[1] Buildings on land taken for Old Colony Parkway and Winthrop Parkway not included.

NANTASKET BEACH RESERVATION. — Sea Wall, looking Northerly from Southerly End, Low Tide.

TABLE 2.— SUMMARY OF COST OF ROAD REPAIRS AND MAINTENANCE, 1915.

PARKWAY OR RESERVATION.	Length (Feet).	Width of Roadway (Feet).	Square Yards.	Cost per Square Yard in Detail.								Total Amount.	Remarks.	Location.
				Labor (Cents).	Gravel (Cents).	Broken Stone (Cents).	Sand (Cents).	Bituminous Binder or Dust Layer.						
								Kind of Material.	Gallons per Square Yard.	Cost (Cents).	Cost of Applying (Cents).	Total Cost (Cents).		
Blue Hills Parkway, .	2,600	36	10,400	.34	–	–	.09	Asphaltic oil (Baker Texaco No. 1).	.15	.76	–	1.19	$124 25	Surface treatment,	Blue Hills Parkway extension to Harland Street, Milton.
Blue Hills Parkway, .	10,608	36	42,434	.97	–	–	.05	Asphaltic oil (Baker Texaco No. 1).	.18	.92	–	1.94	822 10	Surface treatment,	Easterly roadway, Milton.
Blue Hills Parkway, .	2,437	26	7,040	12.00	–	.43	.17	Tarite No. 1 (American Tar Company).	.56	4.27	–	14.24	1,002 00	Patching and surface treatment.	Westerly roadway, Milton.
Blue Hills Reservation,	9,450	16	16,800	1.28	–	–	.29	Asphaltic oil (Baker Texaco No. 1).	.23	1.16	–	2.73	459 00	Surface treatment,	Unquity Road, Milton.
Blue Hills Reservation,	7,312	16	13,000	2.01	–	–	.37	Asphaltic oil (Baker Texaco No. 1).	.24	1.22	–	3.60	468 75	Surface treatment,	Hillside Street, Milton.
Blue Hills Reservation,	3,543	16	6,300	.37	–	–	.10	Asphaltic oil (Baker Texaco No. 1).	.37	1.84	–	2.30	145 25	Surface treatment,	Harland Street, Milton.
Blue Hills Reservation,	7,593	16	13,511	.82	–	–	.16	Asphaltic oil No. 6 (Standard Oil Company).	.43	2.15	–	3.13	422 00	Surface treatment,	Border Road, Milton and Randolph.
Blue Hills Reservation,	5,000	16	8,888	1.42	–	–	.29	Asphaltic oil No. 6 (Standard Oil Company).	.62	3.03	–	4.74	420 30	Surface treatment,	Wampatuck Road, Administration Road to Furnace Brook Parkway, Quincy.
Blue Hills Reservation,	7,780	16	13,831	.91	–	–	.15	Asphaltic oil No. 6 (Standard Oil Company).	.43	2.15	–	3.21	444 00	Surface treatment,	Administration Road, Milton and Quincy.
Charles River Reservation.	4,700	12	6,267	1.60	.80	–	–	Asphaltic oil No. 4 (Standard Oil Company).	.19	.94	–	3.34	209 30	Surface treatment,	Forest Grove Road.
Charles River Reservation.	9,300	13	13,500	1.16	.07	–	–	Asphaltic oil No. 4 (Standard Oil Company).	.16	.80	–	2.03	274 55	Patching and surface treatment.	Quinobequin Road, Newton Upper Falls to Newton Lower Falls.

TABLE 2. — SUMMARY OF COST OF ROAD REPAIRS AND MAINTENANCE, 1915 — *Continued.*

PARKWAY OR RESERVATION.	Length (Feet).	Width of Roadway (Feet).	Square Yards.	Cost per Square Yard in Detail.								Total Amount.	Remarks.	Location.
				Labor (Cents).	Gravel (Cents).	Broken Stone (Cents).	Sand (Cents).	Bituminous Binder or Dust Layer.						
								Kind of Material.	Gallons per Square Yard.	Cost (Cents).	Cost of Applying (Cents).	Total Cost (Cents).		
Charles River Reservation.	9,200	60, 40	55,500	.25	–	–	–	Calcium chloride, .	–	1.54	.28	2.07	$1,152 59	Surface treatment,	Soldiers' Field Road, Brighton.
Charles River Reservation.	5,400	26, 36	16,211	.20	–	–	.40	Asphaltic oil (Baker Texaco No. 1).	.25	1.24	–	1.84	298 20	Surface treatment,	North Beacon Street to Watertown Square, Watertown.
Charles River Reservation.	1,375	26, 36	4,277	60.58	–	16.16	1.34	Asphaltic binder A (Standard Oil Company).	.49	3.44	–	81.52	3,486 58	Reconstruction, .	Irving Street to Riverside Street, Watertown.
Charles River Reservation.	3,100	40	13,777	.18	–	–	.36	Asphaltic oil (Baker Texaco No. 1).	.29	1.46	–	2.00	275 20	Surface treatment,	Arsenal Street to North Beacon Street, Watertown.
Fresh Pond Parkway, .	2,700	40	12,000	.68	.21	–	.95	Asphaltic oil (Baker Texaco No. 1).	.58	2.63	–	5.47	658 34	Surface treatment,	Mt. Auburn Street to Huron Avenue, Cambridge.
Furnace Brook Parkway.	7,700	34, 36, 40	31,500	1.40	–	–	.55	Asphaltic oil (Baker Texaco No. 1).	.25	1.27	–	3.22	1,015 90	Surface treatment,	Adams Street to Bunker Hill Lane, Quincy.
Lynnway, . . .	2,653	32	9,479	1.46	–	1.96	.33	Tarine No. 1 and No. 2 (American Tar Company).	.51	3.87	–	7.62	721 35	Surface treatment,	Northern Circle to Saugus River Bridge, Revere.
Lynn Shore Reservation.	2,774	40	12,327	.99	–	1.38	–	Tar binder No. 3 (Independent Coal Tar Company).	.32	2.56	–	4.94	609 35	Surface treatment,	Between Prescott Place and Washington Street, Lynn.
Lynn Fells Parkway, .	3,905	32, 40	16,008	3.66	–	2.38	–	Asphaltic binder A, .	.37	2.58	–	8.62	1,381 08	Surface treatment,	Reservation to Tremont Street and Melrose Street to Bellevue Avenue, Melrose.
Lynn Fells Parkway, .	1,810	40	8,045	1.99	–	–	–	Asphaltic oil No. 4, .	.19	.91	–	2.90	233 50	Patching, . .	Tremont Street to Melrose Street, Melrose.
Middlesex Fells Parkway.	2,800	30	9,333	1.27	–	2.73	–	Tarine No. 1, . .	.46	3.34	–	7.34	685 65	Surface treatment,	Broadway to Middlesex Avenue (easterly roadway), Somerville.

NANTASKET BEACH RESERVATION. — **Sea Wall, looking South from Near Nantasket Hotel.**

Middlesex Fells Parkway.	3,535	26, 40	10,586	1.53	–	2.28	–	Tarine No. 1, . .	.46	3.37	–	7.18	761 10	Surface treatment,	Revere Beach Parkway to Boston & Maine Railroad bridge (westerly roadway), Malden.
Middlesex Fells Parkway.	3,930	21, 24	9,170	1.52	–	3.13	–	Asphaltic binder A, .	.53	3.70	–	8.35	766 67	Surface treatment,	Forest Street to Forest Street (westerly roadway), Medford.
Middlesex Fells Parkway.	2,736	27	8,208	1.28	–	2.37	–	Tarine No. 1, . .	.37	2.87	–	6.52	535 05	Surface treatment,	Forest Street to Elm Street (easterly roadway), Medford.
Middlesex Fells Parkway.	941	36	3,764	19.77	–	29.21	–	Asphaltic binder A, .	1.04	7.25	–	56.23	2,119 22	Reconstruction, .	Fulton Street to Park Street (northerly roadway), Medford.
Middlesex Fells Reservation.	1,480	23	3,782	9.56	–	1.27	–	Asphaltic binder A, .	.87	6.13	–	28.39	1,072 64	Resurfacing, .	Bear Hill Road to northerly end of Duck Pond, Stoneham.
Middlesex Fells Reservation.	2,124	24, 28	6,310	27.07	–	31 88	–	Asphaltic binder A, .	1.19	8.48	–	67.43	4,244 28	Reconstruction, .	Forest Street, three sections between Elm Street and Brooks Road, Medford.
Middlesex Fells Reservation.	2,550	20, 22	6,144	30.36	–	41.55	–	Asphaltic binder A, .	1.65	11.08	.85	83.84	5,151 38	Reconstruction, .	Ravine Road, Melrose line to 2,550 feet northerly, Stoneham.
Mystic Valley Parkway,	730	36, 40	5,879	35.86	–	25.76	–	Asphaltic binder A, .	1.52	10.65	–	72.27	4,249 45	Reconstruction, .	Boston Avenue to Alewife Brook, Medford.
Mystic Valley Parkway,	4,800	40	21,333	5.47	–	4.66	–	Asphaltic binder A, .	.48	3.36	–	13.49	2,880 62	Patching and surface treatment.	Boston Avenue to Armory Bridge, Medford.
Nantasket Beach Reservation.	3,140	45, 75, 90	18,900	2.05	–	3.04	–	Tarvia B (Barrett Manufacturing Company).	.44	3.56	–	8.65	1,635 47	Surface treatment,	Nantasket Avenue and Wharf Avenue, Hull.
Neponset River Parkway.	2,750	26	7,944	1.59	–	–	–	Asphaltic oil (Baker Texaco No. 1).	.20	1.01	–	2.60	206 50	Surface treatment,	Blue Hill Avenue to Brush Hill Road, Milton.
Quincy Shore Reservation.	11,100	24, 40	38,562	2.37	–	–	–	Tarine No. 1, . .	.41	2.88	–	5.30	2,040 49	Patching and surface treatment.	Quincy Shore Drive, Atlantic Street to National Sailors' Home, Quincy.
Revere Beach Parkway,	4,300	28, 36	15,608	1.37	–	1.57	–	Tarvia A (Barrett Manufacturing Company).	.32	2.48	.05	5.42	846 96	Surface treatment,	Middlesex Fells Parkway to Broadway, Everett.
Revere Beach Parkway,	1,757	36	7,030	38.69	.39	38.71	1.54	Tarine No. 1 and No. 2.	2.45	19.27	.31	98.91	6,953 64	Reconstruction, .	Between Washington Street and Webster Avenue, Chelsea.
Revere Beach Parkway,	2,083	36	8,332	39.79	.09	36.88	1.69	Tarine No. 1 and No. 2.	2.58	20.27	.78	99.50	8,290 49	Reconstruction, .	Between Borden Street and Garfield Avenue, Chelsea.
Revere Beach Parkway,	3,292	36	13,167	.98	–	1.85	.46	Tarine No. 1, . .	.37	2.67	–	5.96	784 79	Surface treatment,	Between Everett Avenue and Second Street (northerly roadway), Everett.

TABLE 2.— SUMMARY OF COST OF ROAD REPAIRS AND MAINTENANCE, 1915 — *Concluded.*

PARKWAY OR RESERVATION.	Length (Feet).	Width of Roadway (Feet).	Square Yards.	Cost per Square Yard in Detail.								Total Amount.	Remarks.	Location.
				Labor (Cents).	Gravel (Cents).	Broken Stone (Cents).	Sand (Cents).	Bituminous Binder or Dust Layer. Kind of Material.	Gallons per Square Yard.	Cost (Cents).	Cost of Applying (Cents).	Total Cost (Cents).			
Revere Beach Parkway,	1,600	26	4,622	.71	–	–	.81	Rotar (American Tar Company).	.29	1.82	–	3.34	$154 62	Surface treatment,	Between Washington Avenue and Webster Avenue (northerly roadway), Chelsea.
Revere Beach Parkway,	380	26	1,098	52.62	.89	49.25	5.12	Tarvia X (Barrett Manufacturing Company).	2.58	19.53	–	127.41	1,399 06	Reconstruction,	Between Second and Spring streets (southerly roadway), Everett.
Revere Beach Parkway,	450	18	900	12.10	–	39.10	4.17	Tarine No. 1 and No. 2.	2.56	20.07	–	75.44	678 96	Construction,	Stowers Court, between Revere Beach Parkway to taking line, Revere.
Revere Beach Parkway,	1,520	36	6,080	9.38	–	15.37	.62	Tarine No. 1 and No. 2.	1.98	15.43	–	40.80	2,480 64	Resurfacing,	Between Stowers Court and Winthrop Avenue, Revere.
Revere Beach Parkway,	1,390	36	5,559	1.74	–	.38	.34	Tarine No. 1, . .	.33	2.49	–	4.95	275 12	Surface treatment,	Between Borden Street and Broadway, Revere.
Revere Beach Reservation.	2,300	40	10,222	.49	–	1.92	–	Tarine No. 1 and No. 2.	.35	2.59	–	5.00	513 32	Surface treatment,	Chester Avenue to Revere Street, Revere.
Revere Beach Reservation.	5,497	40	24,430	1.00	–	.89	–	Tarine No. 1, . .	.30	2.25	–	4.14	1,013 77	Surface treatment,	Oak Island Avenue to Lynnway, Revere.
Stony Brook Reservation.	10,975	16	19,511	1.43	–	–	.42	Asphaltic oil (Baker Texaco No. 1).	.37	1.36	–	3.21	625 50	Surface treatment,	Turtle Pond Road, West Glenwood Avenue to Washington Street, Hyde Park and Boston.
Stony Brook Reservation.	2,100	16	3,734	2.04	–	–	.32	Asphaltic oil (Baker Texaco No. 1).	.21	1.07	–	3.43	128 00	Surface treatment,	Bold Knob Road, Boston.
Stony Brook Reservation.	4,100	18	8,200	1.35	–	–	.49	Asphaltic oil (Baker Texaco No. 1).	.65	3.27	–	5.11	419 00	Surface treatment,	West Border Road, Boston.
Woburn Parkway, .	7,300	18	14,600	1.00	–	.77	–	Tarine No. 1, . .	.47	3.87	.05	5.69	832 23	Surface treatment,	Pond Street, Winchester, to Pleasant Street, Woburn.
Winthrop Parkway, .	1,223	30	4,079	3.53	–	1.70	.77	Tar binder No. 3, .	.49	3.93	–	9.93	404 96	Surface traetment,	Wave Avenue southerly to Ocean Avenue, Revere.

FINANCIAL STATEMENT.

DEC. 1, 1914, TO DEC. 1, 1915.

Metropolitan Parks Loan Fund,	$9,000,000 00
Receipts added to loan before June 1, 1901,	198,942 81
	$9,198,942 81

EXPENDITURES.

Blue Hills Reservation: —				
Work under chapter 4, Special Acts of 1915: —				
Forestry work,	$8,999 25			
Road work,	10,886 69			
		$19,885 94		
			$19,885 94	
Middlesex Fells Reservation: —				
Land,		$330 26		
Legal,		5 91		
Work under chapter 4, Special Acts of 1915: —				
Forestry work,	$5,076 10			
Pipe line to recreation ground,	2,021 65			
		7,097 75		
			7,433 92	
Revere Beach Reservation: —				
Work under chapter 4, Special Acts of 1915: —				
Cleaning beach and other work,		$1,471 66		
			1,471 66	
Stony Brook Reservation: —				
Work under chapter 4, Special Acts of 1915: —				
Forestry work,		$998 75		
			998 75	
Beaver Brook Reservation: —				
Work under chapter 4, Special Acts of 1915: —				
Regrading corner of Quince Street,		$499 64		
			499 64	
Charles River Reservation: —				
Legal,		$2,173 20		
Work under chapter 4, Special Acts of 1915: —				
Walk, Gerry's Landing to Arsenal Street,	$8,096 64			
Charles River Road, Irving Street to Riverside Street,	1,899 95			
Grading site for band stand,	1,299 47			
Water supply, etc., recreation grounds,	1,044 32			
Grading Speedway track,	999 10			
Forestry work,	995 58			
Widening Forest Grove Road,	915 72			
Charles River Road east from Speedway,	213 50			
		15,464 28		
Work at Lower Basin,		981 25		
			18,618 73	
Amounts carried forward,			$48,908 64	$9,198,942 81

Amounts brought forward,		$48,908,64	$9,198,942 81
Mystic River Reservation: —			
Work under chapter 4, Special Acts of 1915: —			
Improving banks,	$1,493 00		
		1,493 00	
Winthrop Shore Reservation: —			
Work under chapter 4, Special Acts of 1915: —			
General work, $462 27			
Groins and filling, 380 69			
Tarred walks, 468 60			
	$1,311 56		
		1,311 56	
Weston Bridge: —			
Engineering: —			
Pay rolls, $179 05			
Expenses, 111 70			
	$190 75		
Landscape architects: —			
Services, $99 80			
Expenses, 2 63			
	102 43		
		393 18	
		$52,106 38	
Amounts charged to Dec. 1, 1914,		9,038,871 86	
			9,090,978 24
Balance,			$107,964 57

Metropolitan Parks Loan Fund, Series II.

Metropolitan Parks Loan Fund, Series II.,			$6,285,000 00
Receipts added to loan before June 1, 1901,			29,914 16
			$6,314,914 16
Expenditures.			
Middlesex Fells Parkway: —			
Legal,	$35 11		
Work under chapter 5, Special Acts of 1915: —			
Widening Forest Street, $10,972 35			
Substation, 3,800 00			
	14,772 35		
		$14,807 46	
Mystic Valley Parkway: —			
Construction: —			
Contracts: —			
Coleman Brothers, $55,235 73			
Apted & McDuffee, 1,870 00			
$57,105 73			
Labor and materials, 1,672 57			
	$58,778 30		
Engineering: —			
Pay rolls, $1,774 43			
Expenses, 94 00			
	1,868 43		
Landscape architects: —			
Expenses, $0 21			
	21		
Amounts carried forward,	$60,647 94	$14,807 46	$6,314,914 16

Amounts brought forward,			$60,647 94	$14,807 46	$6,314,914 96
Legal,			328 34		
Advertising and printing contract,			236 78		
Architects, locktenders' house,			50 00		
Advertising sale of locktenders' house,			6 75		
				61,268 81	
Revere Beach Parkway: —					
Legal,			$33 34		
Work under chapter 5, Special Acts of 1915: —					
Reconstruction and repairs,		$10,494 06			
			10,494 06		
				10,527 40	
Fresh Pond Parkway: —					
Engineering: —					
Pay rolls,		$11 38			
			$11 38		
Work under chapter 5, Special Acts of 1915: —					
Grading Gerry's Landing,		$999 00			
			999 00		
				1,010 38	
Furnace Brook Parkway: —					
Land,			$2,000 00		
Construction: —					
Contracts: —					
John Cashman & Sons Company,	$28,246 35				
Hugh Nawn Contracting Company,	1,700 00				
		$29,946 35			
Labor and materials,		120 19			
			30,066 54		
Engineering: —					
Pay rolls,		$2,564 54			
Expenses,		733 26			
			3,297 80		
Legal,			432 64		
Claims,			100 00		
Advertising and printing contracts,			279 84		
Miscellaneous,			11 45		
				36,188 27	
Nahant Beach Parkway: —					
Work under chapter 5, Special Acts of 1915: —					
Cleaning beach and other work,			$1,000 00		
				1,000 00	
Winthrop Parkway: —					
Land,			$10,708 81		
Engineering: —					
Pay rolls,		$239 26			
Expenses,		10 00			
			249 26		
Legal,			261 10		
				11,219 17	
Alewife Brook Parkway: —					
Engineering: —					
Pay rolls,		$154 85			
			$154 85		
Landscape architects: —					
Services,		$5 00			
			5 00		
				159 85	
Amounts carried forward,				$136,181 34	$6,314,914 16

Amounts brought forward,				$136,181 34	$6,314,914 16
Middlesex Fells Roads: —					
Work under chapter 5, Special Acts of 1915: —					
Widening Emerson Street Border Road,			$3,988 18		
				3,988 18	
Old Colony Parkway: —					
Land,			$33,892 95		
Engineering: —					
Pay rolls,	$903 43				
Expenses,	74 60				
		978 03			
Legal,			1,664 51		
Claims,			13,304 78		
				49,840 27	
Woburn Parkway: —					
Land,			$1,265 68		
Work under chapter 5, Special Acts of 1915: —					
Painting, grading and improving,			1,904 35		
				3,170 03	
Dedham Parkway: —					
Land,			$25 00		
Legal,			817 31		
Work under chapter 5, Special Acts of 1915: —					
Construction,			10,798 03		
				11,640 34	
Hammond Pond Parkway: —					
Land,			$12,295 38		
Engineering: —					
Pay rolls,	$27 30				
		27 30			
Landscape architects: —					
Services,	$15 00				
		15 00			
Legal,			118 69		
				12,456 37	
Quannapowitt Parkway: —					
Engineering: —					
Pay rolls,	$547 97				
Expenses,	31 07				
		$579 04			
Legal,			77 78		
				656 82	
Vose's Grove: —					
Engineering: —					
Pay rolls,	$2 00				
		$2 00			
				2 00	
Wellington Bridge: —					
Construction: —					
Contracts: —					
Rendle & Stoddard,	$30,809 80				
Coleman Brothers,	47,860 48				
		$78,670 28			
Labor and materials,		11,286 93			
			$89,957 21		
Amounts carried forward,			$89,957 21	$217,935 35	$6,314,914 16

BLUE HILLS RESERVATION. — Drinking Fountain in Memory of Abbott Lawrence Rotch.

Amounts brought forward,		$89,957 21	$217,935 35	$6,314,914 16
Engineering: —				
Pay rolls,	$1,185 23			
Expenses,	197 54			
		1,382 77		
Power for lighting,		214 95		
Signal light,		80 00		
Miscellaneous,		14 26		
			91,649 19	
Neponset Bridge: —				
Engineering: —				
Pay rolls,	$297 79			
Expenses,	404 17			
		$701 96		
Landscape architects: —				
Services,	$151 95			
Expenses,	4 99			
		156 94		
			858 90	
Arlington Parkway: —				
Work under chapter 5, Special Acts of 1915: —				
Work on road, southerly side of Lower Mystic Lake,		$4,035 12		
			4,035 12	
			$314,478 56	
Amounts charged to Dec. 1, 1914,			5,294,784 27	
				5,609,262 83
Balance,				$705,651 33

Charles River Basin Loan.

Total amount of loan,				$4,500,000 00
Receipts added to loan,				9,368 91
				$4,509,368 91
Expenditures.				
Engineering: —				
Engineering assistants,		$942 18		
Traveling,		40 05		
Postage and telephones,		1 10		
Supplies,		25 85		
			$1,009 18	
Construction: —				
Contracts: —				
Contract No. 154, Bay State Dredging Company,	$6,744 83			
Contract No. 167, American Steel and Wire Company,	806 96			
Contract No. 168, Gamewell Fire Alarm Telegraph Company,	7,720 75			
Contract No. 183, Rowe Contracting Company,	11,360 67			
		$26,633 21		
Construction, additional: —				
Advertising,	$169 20			
Printing contracts,	49 58			
Labor,	564 42			
Professional services,	21 44			
Freight and express,	18 08			
Amounts carried forward,	$822 72	$26,633 21	$1,009 18	$4,509,368 91

Amounts brought forward,		$822 72	$26,633 21	1,009 18 $4,509,368 91
Hardware,	22 16			
Castings,	1 64			
Pipe and valves,	27 06			
Police signal system,	82 75			
Rent of land,	1 00			
			957 33	
				27,590 54
Real estate: —				
Land and expert,			$140 00	
Settlements,			9,189 00	
				9,329 00
				$37,928 72
Amounts charged to Dec. 1, 1914,				4,354,071 86
				4,392,000 58
Balance,				$117,368 33

Larz Anderson Bridge Fund.

Amount of fund,				$200,000 00
		Expenditures.		
Construction: —				
Contracts: —				
Jno. Williams, Inc., bronze casts,	$2,250 00			
Labor and materials,	657 00			
		$2,907 00		
Engineering: —				
Pay rolls,	$3 45			
Expenses,	2 65			
		6 10		
Landscape architects: —				
Services,	$14 00			
Expenses,	36			
		14 36		
Bronze letters and devices in tablets,		1,433 40		
Models for bronze castings,		1,000 00		
Lighting,		493 17		
Channel lights and installing,		112 40		
Stone caps for posts,		120 00		
			$6,086 43	
Expended to Dec. 1, 1914,			175,182 32	
				181,268 75
Unexpended,				$18,731 25
Interest,				9,265 28
Balance refunded to Lars Anderson,				$27,996 53

North Beacon Street Bridge Loan.

Chapter 780, Acts of 1914,				$175,000 00
		Expenditures.		
Construction: —				
Contracts: —				
W. S. Rendle,	$2,762 91			
		$2,762 91		
Amounts carried forward,			$2,762 91	$175,000 00

Amounts brought forward,		$2,762 91		$175,000 00
Engineering: —				
Services,	$3,682 08			
Expenses,	279 06			
		3,961 14		
Landscape architects: —				
Services,	$281 49			
Expenses,	4 40			
		285 89		
Advertising hearing,		6 05		
			$7,015 99	
Expended Dec. 1, 1914,			336 72	
				7,352 71
Balance,				$167,647 29

Metropolitan Parks System Maintenance.

Appropriation, Dec. 1, 1914, to Dec. 1, 1915,	$409,669 40
Refund, unclaimed amounts drawn on pay roll,	55 73
	$409,725 13

Expenditures.

General expense: —			
Police: —			
Pay rolls,	$96,409 63		
Miscellaneous,	5,548 35		
		$101,957 98	
Salaries: —			
Commissioners,	$3,450 00		
General office,	9,168 72		
Engineering department,	8,746 79		
		21,365 51	
Engineering supplies,		1,023 08	
Rent, lighting and care of offices,		3,330 62	
Stationery and printing,		927 93	
Telephones,		907 83	
Annual report, one-half,		405 65	
Postage,		352 00	
Automobile expense,		316 67	
Traveling,		298 10	
Maps and books,		256 48	
Premiums on bonds,		201 60	
Filing cabinets, cards, etc.,		99 76	
Recording papers and certified copies,		87 13	
Mimeograph,		62 00	
Reports of hearings,		61 30	
Towel supply,		53 75	
Electrical fixtures,		37 89	
Ice,		36 97	
Storing awnings,		31 30	
Typewriter supplies and repairs,		29 53	
Press clippings,		25 80	
Landscape architects, services,		25 00	
Spring water,		24 80	
Office repairs,		21 61	
Photographs and slides,		12 10	
Expense of sending exhibits to expositions,		10 45	
Architects, services,		10 00	
Door checks,		9 50	
Amounts carried forward,		$131,982 34	$409,725 13

Amounts brought forward,		$131,982 34	$409,725 13
Copy cloths,		9 00	
Rubber stamps,		5.75	
Office supplies,		4 91	
Medical attendance,		3 00	
Waste baskets,		2 50	
Gauze,		2 45	
Matches,		2 45	
Expenses on account of bond sales,		73	
Newsboys' badges,		50	
			$132,013 63
Blue Hills Reservation: —			
Labor,	$33,658 62		
Teaming,	258 00		
Keep of horses,	4,534 99		
Horses, carriages, automobiles, etc.,	1,984 06		
		$40,435 67	
Labor and supplies, gypsy and brown-tail moth work,		43,934 66	
General supplies,		2,967 18	
Watering or its equivalent,		2,198 25	
Water rates,		420 51	
Pine seedlings,		407 14	
Telephones,		271 31	
Lighting buildings,		239 69	
Repairs,		201 54	
Wiring superintendent's house,		142 00	
Stationery and printing,		131 84	
Typewriter,		87 08	
Express and freight,		76 80	
Assembling air compression,		61 20	
			91,574 87
Middlesex Fells Reservation: —			
Labor,	$20,713 61		
Teaming,	910 00		
Keep of horses,	2,009 34		
Horses, carriages, automobiles, etc.,	1,511 00		
		$25,143 95	
Labor and supplies, gypsy and brown-tail moth work,		25,001 57	
Watering or its equivalent,		4,733 87	
General supplies,		2,951 51	
Grading, near sheepfold,		486 00	
Telephones,		312 88	
Lighting buildings,		219 00	
Stationery and printing,		195 59	
Fertilizer,		130 00	
Swing and slide,		106 00	
Repairs,		80 00	
Stone,		71 32	
Express and freight,		62 27	
Typewriter (exchange),		41 13	
Animals,		32 85	
Water rates,		31 59	
Traveling,		30 35	
			59,629 88
Revere Beach Reservation: —			
Labor,	$19,323 37		
Teaming,	85 25		
Keep of horses,	641 65		
Horses, carriages, automobiles, etc.,	1,759 36		
		$21,809 63	
Amounts carried forward,		$21,809 63	$283,218 38 $409,725 13

Amounts brought forward,	$21,809 63	$283,218 38	$409,725 13
Street lighting,	4,171 24		
General supplies,	2,516 66		
Watering or its equivalent,	2,179 94		
Granolithic walk,	767 40		
Telephones,	425 68		
Lighting buildings,	378 47		
Landscape architects: —			
Services, $230 10			
Expenses, 4 42			
	234 52		
Water rates,	204 83		
Stationery and printing,	161 92		
Express and freight,	75 45		
Traveling,	38 41		
Repairs,	24 20		
Sealing scales,	1 67		
		32,990 02	
Stony Brook Reservation: —			
Labor, $2,486 04			
Teaming, 288 00			
Keep of horses, 27 75			
Horses, carriages, etc., 208 00			
	$3,009 79		
Labor and supplies, gypsy and brown-tail moth work,	5,000 00		
Watering or its equivalent,	1,146 80		
General supplies,	307 84		
Telephones,	40 96		
Repairs,	15 64		
Water rates,	14 00		
Sealing scales,	1 12		
Express,	75		
		9,536 90	
Beaver Brook Reservation: —			
Labor, $2,547 61			
Teaming, 44 75			
Keep of horses, 164 74			
Horses, carriages, etc., 71 40			
	$2,828 50		
Labor and supplies, gypsy and brown-tail moth work,	485 60		
General supplies,	179 29		
Wiring superintendent's house,	143 50		
Telephones,	47 41		
Repairs,	45 38		
Loam,	39 00		
Water rates,	35 20		
Stone,	31 60		
Stationery and printing,	30 50		
Traveling,	5 10		
Express,	73		
		3,871 81	
Charles River, Upper Division: —			
Labor, $16,348 31			
Teaming, 2,048 25			
Keep of horses, 1,481 45			
Horses, carriages, automobiles, etc., 1,346 85			
	$21,224 86		
Labor and supplies, gypsy and brown-tail moth work,	8,308 08		
General supplies,	2,864 76		
Watering or its equivalent,	2,609 41		
Street lighting,	2,545 53		
Amounts carried forward,	$37,552 64	$329,617 11	$409,725 13

Amounts brought forward,		$37,552 64	$329,617 11	$409,725 13
Shingling buildings, recreation grounds,		2,235 00		
Stone,		1,878 29		
Telephones,		402 41		
Lighting buildings,		305 60		
Loam,		250 00		
Repairs,		196 00		
Water rates,		166 54		
Stationery and printing,		83 50		
Payments under industrial accident act,		83 00		
Landscape architects, services,		58 07		
Sand,		57 50		
Trees,		55 50		
Traveling,		44 56		
Express and freight,		26 49		
Analysis of paint,		25 00		
Fountain,		23 85		
Sealing scales,		2 30		
			43,446 25	
Neponset River Reservation: —				
Labor,		$773 90		
Labor and supplies, gypsy and brown-tail moth work,		1,998 76		
Telephones,		24 00		
General supplies,		4 31		
			2,800 97	
Mystic River Reservation: —				
Labor,	$8,074 90			
Teaming,	1,339 50			
		$9,414 40		
General supplies,		630 80		
Loam,		525 00		
Power for draw,		250 00		
Changes in controllers,		147 65		
Street lighting,		110 70		
Landscape architects: —				
Services,	$100 49			
Expenses,	92			
		101 41		
Telephones,		53 92		
Labor and supplies, gypsy and brown-tail moth work,		48 40		
Boat,		45 00		
Repairs,		36 75		
Water rates,		12 98		
Express,		2 50		
Engineering, expenses,		1 00		
			11,380 51	
Lynn Shore Reservation: —				
Labor,		$4,024 27		
Street lighting,		2,520 00		
Watering or its equivalent,		718 03		
General supplies,		235 78		
Wire fence,		95 00		
Landscape architects: —				
Services,	$62 90			
Expenses,	42			
		63 32		
Fountains,		45 68		
Water rates,		35 00		
Physician,		10 00		
Repairs,		5 95		
			7,753 03	
Amounts carried forward,			$394,997 87	$409,725 13

Amounts brought forward,			$394,997 87	$409,725 13
Quincy Shore Reservation: —				
Labor,	$5,187 25			
Teaming,	807 00			
		$5,994 25		
Watering or its equivalent,		2,040 49		
Street lighting,		1,486 88		
Labor and supplies, gypsy and brown-tail moth work,		399 00		
General supplies,		381 17		
Steel bars,		242 20		
Lighting buildings,		56 33		
Telephones,		53 64		
Water rates,		46 62		
Desk chair,		31 75		
Stationery and printing,		25 70		
Landscape architects: —				
Services,	$11 25			
Expenses,	1 47			
		12 72		
Repairs,		10 60		
Trees,		5 60		
Express,		35		
			10,787 30	
Winthrop Shore Reservation: —				
Labor,		$1,649 07		
Sea wall (part),		1,087 74		
Street lighting,		615 96		
Watering or its equivalent,		261 83		
General supplies,		213 90		
Water rates,		26 83		
Lighting buildings,		10 00		
			3,865 33	
				409,650 50
Balance,				$74 63

Special Appropriations.

Pensions.

Appropriations,			$3,026 00
Expenditures.			
Mateer pension,		$300 00	
Powers pension,		400 00	
Haddock pension,		638 75	
Stewart pension,		600 00	
Finn pension,		357 50	
Geer allowance,		364 00	
Woodworth allowance,		364 00	
			3,024 25
Balance,			$1 75

Band Concerts.

Appropriation,			$25,000 00
Expenditures.			
Blue Hills Division: —			
Bands,	$1,672 35		
Expenses of extra police,	14 30		
		$1,686 65	
Amounts carried forward,			$1,686 65	$25,000 00

Amounts brought forward,		$1,686 65	$25,000 00
Middlesex Fells Division: —			
Bands,	$3,376 94		
Expenses of extra police,	51 00		
Lighting band stands,	10 00		
		3,437 94	
Revere Beach Reservation: —			
Bands,	$6,049 00		
Lighting band stands,	94 40		
		6,143 40	
Charles River, Upper Division: —			
Bands,	$3,501 08		
Expenses of extra police,	27 00		
Lighting band stands,	10 00		
Ice,	1 10		
		3,539 18	
Charles River, Lower Basin: —			
Bands,	$1,011 50		
Setting up and taking down band stand,	132 50		
Lighting band stand,	54 63		
		1,198 63	
Nahant Beach Parkway: —			
Bands,	$1,933 20		
Expenses of extra police,	64 50		
Chairs,	25 50		
		2,023 20	
Nantasket Beach Reservation: —			
Bands,	$6,949 80		
		6,949 80	
General expense: —			
Printing schedules,	$21 20		
		21 20	
			25,000 00
Balance,			–

Bulkhead, Revere Beach.

Appropriation,			$2,600 00
EXPENDITURES.			
Labor,		$407 75	
		$407 75	
Expended to Dec. 1, 1914,		1,638 85	
			2,046 60
Balance,			$553 40

Removal of Objectionable Material, Quincy Shore Reservation.

Appropriation,			$3,000 00
EXPENDITURES.			
Contract, John Cashman & Sons Company,		$2,017 50	
		$2,017 50	
Expended to Dec. 1, 1914,		549 75	
			2,567 25
Balance,			$432 75

Sea Wall Northerly from Oak Island.

Appropriation,			$30,000 00
EXPENDITURES.			
Contract, Rowe Contracting Company,		$16,648 97	
Labor,		682 50	
Engineering: —			
Pay rolls,	$268 56		
Expenses,	149 85		
		418 41	
Preservative,		107 45	
Sand dryer,		61 00	
		$17,918 33	
Expended to Dec. 1, 1914,		8,533 11	
			26,451 44
Balance,			$3,548 56

Sea Wall, Northerly End of Winthrop Shore Reservation.

Appropriation,			$25,000 00
EXPENDITURES.			
Contract, Caputo & Giovannini,		$18,155 32	
Rockport Granite Company,		2,762 15	
Engineering: —			
Pay rolls,	$421 60		
Expenses,	77 64		
		499 24	
		$21,416 71	
Expended to Dec. 1, 1914,		3,583 29	
			25,000 00
Balance,			–

Protection of Great Head, Winthrop.

Appropriation (conditional upon acceptance of act by town of Winthrop),		$25,500 00
Expended,		–
Balance,		$25,500 00

Dredging Charles River between Moody Street and Waltham-Watertown Line.

Appropriation,			$20,000 00
EXPENDITURES.			
Engineering: —			
Pay rolls,	$244 83		
Expenses,	4 03		
		$248 86	
Landscape architects: —			
Services,	$160 50		
Expenses,	2 60		
		163 10	
Advertising and printing contracts,		164 54	
			576 50
Balance,			$19,423 50

Shore Protection, Revere Beach Reservation.

Appropriation,		$30,000 00
EXPENDITURES.		
Contract, Coleman Brothers,	$9,469 00	
Engineering: —		
Pay rolls, $897 58		
Expenses, 85 48		
	983 06	
Landscape architects: —		
Services, $71 25		
Expenses, 24		
	71 49	
Laying water pipe,	264 46	
Advertising and printing contract,	198 39	
		10,986 40
Balance,		$19,013 60

Aberjona River Improvement.

Appropriation,		$15,000 00
EXPENDITURES.		
Contract, Coleman Brothers,	$1,836 00	
Town of Winchester, contribution to cost of improvements in drainage,	1,000 00	
Engineering: —		
Pay rolls, $404 69		
Expenses, 13 69		
	418 38	
Advertising and printing contract,	177 34	
		3,431 72
Balance,		$11,568 28

Improving Heating Apparatus, Revere Beach Bath-house.

Appropriation,		$35,000 00
EXPENDITURES.		
Contract, W. A. & H. A. Root, Inc.,	$1,700 00	
Engineering: —		
Pay rolls, $55 55		
	55 55	
Architects,	600 00	
		2,355 55
Balance,		$32,644 45

Increasing Bathing Facilities, Nahant Beach Bath-house.

Appropriation,		$12,000 00
EXPENDITURES.		
Contract, Harry E. Hardy,	$9,887 20	
Lockers,	977 76	
Architect,	767 49	
		11,632 45
Balance,		$367 55

Investigation of Development of West Roxbury Parkway.

Appropriation,		$500 00
EXPENDITURES.		
Engineering: —		
Pay rolls,	$1 00	
		1 00
Balance,		$499 00

Expenses of Apportionment Commission.

Appropriation,	$1,000 00	
By vote of Governor and Council,	2,000 00	
		$3,000 00
EXPENDITURES.		
Reports of hearings,	$1,064 00	
Advertising hearings,	581 20	
Stationery and printing,	58 92	
Automobile listing,	168 11	
Certified copies,	2 00	
		1,874 23
Balance,		$1,125 77

West Roxbury Parkway Maintenance.

Appropriation,		$2,500 00
EXPENDITURES.		
Labor and supplies, gypsy and brown-tail moth work,	$2,470 31	
		2,470 31
Balance,		$29 69

Bulkhead, Nantasket Beach Reservation.

Appropriation,		$6,000 00
EXPENDITURES.		
Contract, Hugh Nawn Contracting Company,	$5,598 38	
Labor and materials,	401 62	
		6,000 00
Balance,		–

Investigation by Metropolitan Park Commission and Massachusetts Highway Commission relative to Ocean Avenue, Revere.

Appropriation,	$300 00
Expended,	–
Balance,	$300 00

Metropolitan Parks, Boulevard Maintenance.

Appropriation, Dec. 1, 1914, to Dec. 1, 1915,			$243,008 16
Refund, unclaimed amounts drawn on pay roll,			6 25
			$243,014 41

Expenditures.

General expense: —				
Police: —				
Pay rolls,	$37,490 31			
Miscellaneous,	7,575 00			
		$45,065 31		
Salaries: —				
Commissioners,	$3,634 00			
Secretary and clerks,	10,112 63			
Engineering department,	9,061 52			
		22,808 15		
Engineering supplies,		951 61		
Rent, lighting and care of offices,		3,293 32		
Automobile expense,		1,363 47		
Telephones,		896 60		
Stationery and printing,		627 08		
Annual report, one-half,		405 64		
Postage,		369 00		
Maps and books,		215 64		
Typewriters,		120 05		
Expenses on account of bond sales,		81 83		
Premiums on bonds,		60 00		
Traveling,		59 15		
Filing cabinets, cards, etc.,		54 19		
Reports on hearings,		47 25		
Recording papers and certified copies,		37 29		
Protectograph,		30 00		
Photographs and slides,		27 13		
Press clippings,		24 65		
Spring water,		22 80		
Towel supply,		16 62		
Office repairs,		16 43		
Electrical fixtures,		11 38		
Advertising rules,		7 10		
Office supplies,		6 38		
Rubber stamps,		6 35		
Copy cloths,		4 50		
Twine,		3 36		
Cleaning room,		3 30		
Newsboys' badges,		2 60		
Typewriter supplies and repairs,		2 60		
Gauze,		2 45		
Matches,		1 75		
			$76,644 98	
Blue Hills Parkway: —				
Labor,	$3,882 75			
Teaming,	177 00			
Horses, carriages, automobiles, etc.,	2,403 12			
		$6,462 87		
Street lighting,		2,160 00		
Watering or its equivalent,		1,266 48		
Labor and supplies, gypsy and brown-tail moth work,		497 75		
General supplies,		288 30		
Amounts carried forward,		$10,675 40	$76,644 98	$243,014 41

Amounts brought forward,	$10,675 40	$76,644 98	$243,014 41
Water rates,	17 90		
Lighting buildings,	10 20		
		10,703 50	
Middlesex Fells Parkway: —			
Labor,	$9,659 75		
Teaming,	2,540 25		
Horses, carriages, automobiles, etc.,	779 79		
	$12,979 79		
Street lighting,	7,451 78		
Watering or its equivalent,	6,694 86		
General supplies,	958 43		
Loam,	823 35		
Labor and supplies, gypsy and brown-tail moth work,	657 72		
Dressing,	125 00		
Stone,	103 06		
Substation: —			
Service pipe,	$37 66		
Gutter,	30 00		
Granite steps,	14 50		
	82 16		
Telephones,	81 87		
Asphalt binder,	30 00		
Lighting buildings,	23 53		
Water rates,	22 48		
Stationery and printing,	2 75		
		30,036 78	
Mystic Valley Parkway: —			
Labor,	$9,371 90		
Teaming,	1,585 00		
Keep of horses,	212 19		
Horses, carriages, automobiles, etc.,	1,016 37		
	$12,185 46		
Watering or its equivalent,	9,557 47		
Street lighting,	4,916 49		
General supplies,	1,289 37		
Labor and supplies, gypsy and brown-tail moth work,	1,021 22		
Stone,	503 67		
Asphalt binder,	231 00		
Loam,	150 00		
Telephones,	116 39		
Stationery and printing,	39 92		
Express and freight,	28 20		
Water rates,	11 35		
Fountains,	10 87		
Lighting band stand,	10 00		
		30,071 41	
Revere Beach Parkway: —			
Labor,	$8,054 53		
Teaming,	216 71		
Keep of horses,	333 01		
Horses, carriages, automobiles, etc.,	900 63		
	$9,504 88		
Watering or its equivalent,	18,013 34		
Street lighting,	5,594 26		
General supplies,	2,369 20		
Dressing,	655 09		
Labor and supplies, gypsy and brown-tail moth work,	407 50		
Power for draw,	328 95		
Painting bridge,	275 39		
Amounts carried forward,	$37,148 61	$147,456 67	$243,014 41

Amounts brought forward,		$37,148 61	$147,456 67	$243,014 41
Sand,		168 75		
Lighting buildings,		146 00		
Landscape architects: —				
Services,	$140 75			
Expenses,	3 76			
		144 51		
Water rates,		41 67		
Installing transformers, etc., Malden River Bridge,		31 92		
Frames and grates for catch basin,		26 66		
Repairs,		26 30		
Stationery and printing,		12 94		
Traveling,		5 90		
Boiler inspection,		5 00		
Express,		1 39		
			37,759 65	
Neponset River Parkway: —				
Labor,	$774 50			
Teaming,	36 00			
Horses, carriages, etc.,	89 38			
		$899 88		
Watering or its equivalent,		206 50		
Labor and supplies, gypsy and brown tail moth work,		199 75		
			1,306 13	
Nahant Beach Parkway: —				
Labor,	$4,119 63			
Keep of horses,	371 12			
Horses, carriages, etc.,	83 00			
		$4,573 75		
Watering or its equivalent,		1,099 26		
Street lighting,		980 00		
General supplies,		209 50		
Rubbish barrels,		50 40		
			6,912 91	
Fresh Pond Parkway: —				
Labor,	$880 00			
Horses, carriages, etc.,	240 00			
		$1,120 00		
Street lighting,		420 00		
Labor and supplies, gypsy and brown-tail moth work,		413 75		
Watering or its equivalent,		413 59		
Loam,		260 00		
General supplies,		139 02		
Typewriter,		87 08		
Repairs,		3 00		
			2,856 44	
Furnace Brook Parkway: —				
Labor,	$1,715 00			
Teaming,	85 50			
Horses, carriages, etc.,	943 02			
		$2,743 52		
Street lighting,		1,161 00		
Watering or its equivalent,		1,015 90		
Labor and supplies, gypsy and brown-tail moth work,		799 50		
Settlement of claims for damages,		100 00		
General supplies,		88 94		
Lighting buildings,		9 56		
Water rates,		7 00		
Repairs,		5 40		
Trees,		3 40		
Express,		31		
			5,934 53	
Amounts carried forward,			$202,226 33	$243,014 41

Amounts brought forward,			$202,226 33	$243,014 41
Winthrop Parkway: —				
Watering or its equivalent,		$479 96		
Street lighting,		359 24		
			839 20	
Lynnway: —				
Labor,		$4,533 44		
Watering or its equivalent,		759 35		
General supplies,		620 30		
Street lighting,		330 87		
Power for draw,		324 00		
Landscape architects: —				
Services,	$26 45			
Expenses,	24			
		26 69		
Lighting buildings,		22 97		
Repairs,		2 85		
			6,620 47	
Lynn Fells Parkway: —				
Labor,	$2,332 58			
Teaming,	478 00			
Horses, carriages, etc.,	17 91			
		$2,828 49		
Watering or its equivalent,		1,738 35		
Street lighting,		1,432 53		
Stone,		279 70		
Asphalt binder,		178 50		
General supplies,		129 01		
Loam,		100 00		
Labor and supplies, gypsy and brown-tail moth work,		48 51		
Water rates,		60		
			6,735 69	
Alewife Brook Parkway: —				
Labor,		$118 36		
Labor and supplies, gypsy and brown-tail moth work,		336 63		
General supplies,		16 73		
			471 72	
Middlesex Fells Roads: —				
Labor,	$1,450 61			
Teaming,	401 00			
Horses, carriages, etc.,	6 45			
		$1,858 06		
Watering or its equivalent,		11,913 23		
Street lighting,		1,910 66		
General supplies,		150 79		
			15,832 74	
Woburn Parkway: —				
Labor,	$3,128 92			
Teaming,	362 00			
Horses, carriages, etc.,	117 85			
		$3,608 77		
Watering or its equivalent,		1,899 67		
Street lighting,		1,012 41		
Loam,		734 40		
General supplies,		152 00		
Stone,		133 64		
Amounts carried forward,		$7,540 89	$232,726 15	$243,014 41

Amounts brought forward,	$7,540 89	$232,726 15	$243,014 41
Asphalt binder,	49 00		
Labor and supplies, gypsy and brown-tail moth work,	47 75		
Stationery and printing,	5 50		
		7,643 14	
Hammond Pond Parkway: —			
Draining land,	$200 00		
		200 00	
			240,569 29
Balance,			$2,445 12

Charles River Basin Maintenance.

Maintenance of Park and Water Areas.

Appropriation, Dec. 1, 1914, to Dec. 1, 1915, $81,200 00

Expenditures.

Labor,	$22,585 12		
Teaming,	27 00		
Keep of horses,	824 69		
Horses, carriages, automobiles, etc.,	1,067 26		
		$24,504 07	
Police: —			
Pay rolls,	$39,636 88		
Miscellaneous,	2,479 21		
		42,116 09	
Street lighting,		4,478 07	
General supplies,		3,041 86	
Granolithic walk,		1,767 61	
Auto-marine engines,		1,015 00	
Watering or its equivalent,		833 87	
Lighting buildings,		710 73	
Repairs,		546 95	
Shelter canopies,		349 30	
Water rates,		296 42	
Telephones,		258 39	
Power lawn mower,		225 00	
Fertiliser,		183 75	
Trees, shrubs and plants,		104 08	
Stationery and printing,		63 14	
Rental of land,		55 00	
Loam,		51 80	
Dressing,		35 40	
Express and freight,		29 51	
Sand,		28 00	
Fence,		25 00	
Sealing scales,		1 64	
			80,720 68
Balance,			$479 32

Maintenance and Operation of Locks, Gates and Drawbridges.

Appropriation, Dec. 1, 1914, to Dec. 1, 1915, $49,810 00

Expenditures.

Labor, pay rolls,		$36,620 46	
Breaking ice,		2,005 19	
Heating,		1,882 79	
Amounts carried forward,		$40,508 44	$49,810 00

Amounts brought forward,	$40,508 44	$49,810 00
Repairs to machinery,	1,410 16	
General supplies,	856 06	
Power for operation of locks, sluices and lights,	816 29	
Part payment, automobile,	570 00	
Lighting lock, gate houses and sluices,	544 10	
Automobile supplies and repairs,	169 60	
Telephones,	79 24	
Water rates,	63 00	
Semaphore signal on drawbridge,	37 00	
Stationery and printing,	25 59	
Laundry,	22 70	
Boiler inspection,	10 00	
Sealing scales,	2 25	
Express,	32	
Traveling,	30	
		45,115 05
Balance,		$4,694 95

Nantasket Beach Maintenance.

Appropriation, Dec. 1, 1914, to Dec. 1, 1915, $34,032 26

Expenditures.

Labor,	$10,491 76		
Teaming,	100 00		
Keep of horses,	412 68		
Horses, carriages, automobiles, etc.,	594 70		
		$11,599 14	
Police: —			
Pay rolls,	$14,699 94		
Miscellaneous,	1,298 97		
		15,998 91	
General supplies,		2,212 31	
Street lighting,		1,151 75	
Watering or its equivalent,		954 29	
Rent, superintendent's house,		420 00	
Water rates,		361 75	
Brick and stone,		292 37	
Repairs,		188 75	
Telephones,		161 24	
Use of steam roller,		125 00	
Moving bowling alley,		100 00	
Shrubs,		70 00	
Express and freight,		48 69	
Stationery and printing,		44 55	
Changing location of hydrant,		33 33	
Laying conduit,		30 63	
Rug,		23 75	
Storing and filling urns,		18 00	
Traveling,		13 15	
Drain pipe rental,		6 00	
Sealing scales,		2 77	
Blasting wall,		2 00	
Post-office box,		1 40	
			33,859 78
Balance,			$172 48

Wellington Bridge Maintenance.

Appropriation, Dec. 1, 1914, to Dec. 1, 1915,		$9,292 79
Expenditures.		
Labor,	$6,707 62	
Teaming,	1 00	
	$6,708 62	
Street lighting,	948 24	
General supplies,	577 18	
Installing fire line,	251 45	
Telephones,	118 33	
Hose house,	90 00	
Boat,	36 00	
Sand,	12 00	
Water rates,	9 04	
Stationery and printing,	6 52	
Express,	25	
		8,757 63
Balance,		$535 16

Metropolitan Parks Expense Fund.

Receipts, Dec. 1, 1914, to Dec. 1, 1915.

Bath-houses: —		
Revere Beach, sale of bath tickets,	$38,346 15	
Nantasket Beach, sale of bath tickets,	16,073 15	
Nahant Beach, sale of bath tickets,	8,525 95	
Blue Hills, sale of bath tickets,	178 00	
		$63,123 25
Rentals: —		
Buildings,	$15,881 77	
Roller-coaster and merry-go-round,	2,100 00	
Street railway locations,	1,813 74	
Houses,	1,151 50	
Land,	876 83	
Ducts,	698 13	
Boathouse sites,	640 00	
Lunch stands and refectories,	565 01	
Boats,	438 10	
Photographic stands,	250 00	
Bath-house sites,	110 00	
Pastures,	90 00	
Automobile stands,	75 00	
		24,690 08
Sales: —		
Land,	$1,839 49	
Wood,	1,669 82	
Grass,	763 00	
Houses,	505 00	
Engines and pumps,	342 00	
Old metal, lumber, rags, etc.,	313 28	
Sanitary napkins,	257 84	
Posts,	228 20	
Runabout,	140 00	
Barrels,	113 15	
Hay,	66 00	
Gravel,	40 75	
Amounts carried forward,	$6,278 53	$87,813 33

Amounts brought forward,	$6,278 53	$87,813 33
Sales — *Con.*		
Old suits,	30 05	
Gas cylinder,	25 00	
Plans,	13 00	
Mileage and railroad tickets,	11 32	
Shrubs,	9 76	
Catch-basin frame,	3 99	
Miscellaneous,	99	
		6,372 64
Court fines,	$3,364 50	
Income,	2,133 52	
Contributions to cost of entrances,	1,068 94	
Reimbursement on account of damage to roads,	714 46	
Refunds and credits,	339 50	
Sidewalk assessments,	269 99	
Removal of garbage,	210 00	
Steamer chair privileges,	170 00	
Unredeemed bathing checks,	88 30	
Damages to motor cycle,	68 57	
Reimbursement for labor furnished,	45 50	
Replaced keys and checks,	54 40	
Money found on reservations,	37 51	
Pay-roll money unclaimed,	30 27	
Telephone tolls,	28 12	
Pay closets, comfort station,	26 74	
Burro privilege,	15 00	
Newspaper licenses,	15 00	
Payment for lost pistol,	14 70	
Water supply,	9 54	
		8,704 56
		$102,890 53
Balance, Dec. 1, 1914,		88,743 02
		$191,633 55

Expenditures.

General expense: —			
Middlesex Fells Parkway substation (Jonsberg),	$716 56		
Accountant,	280 00		
Telephone tolls,	7 25		
		$1,003 81	
Police: —			
Motor cycles,	$2,682 13		
Police signal system,	1,360 78		
Rent and care of armory and shooting gallery,	199 00		
Emergency lectures for police,	193 85		
Horse,	182 00		
Repairs to uniforms,	130 00		
Services of drill master,	90 00		
Installing police box, Malden River Bridge,	33 89		
County of Essex, court fines credited in error by Treasurer to Metropolitan Park Commission,	20 00		
		4,891 65	
Engineering: —			
Calculating machine,	$250 00		
Telephone,	8 00		
		258 00	
Amounts carried forward,		$6,153 46	$191,633 55

Amounts brought forward,		$6,153 46	$191,633 55
Blue Hills Reservation: —			
Boats, etc.,	$224 43		
Mrs. A. L. Rotch, refund of unexpended balance of contribution for memorial fountain,	166 47		
Repairs to buildings,	107 82		
Signs,	67 61		
		566 33	
Middlesex Fells Reservation: —			
Water supply to recreation ground,	$2,057 92		
Rent, superintendent's house,	414 75		
Garage,	232 86		
Tablet, Middlesex Canal,	123 00		
Signs,	56 45		
Architect,	50 00		
Refund on account of deposit for entrance,	20 00		
Repairs to buildings,	16 14		
		2,971 12	
Revere Beach Reservation: —			
Bath-house: —			
Pay rolls,	$21,317 93		
Bathing suits,	4,662 91		
Coal,	2,173 30		
Towels,	1,049 30		
Lighting,	995 58		
Engine room,	528 05		
Stockings,	450 00		
Water rates,	364 38		
Soap, etc.,	286 06		
Toilet paper,	269 30		
Hardware,	251 54		
Paint,	176 04		
Lumber, etc.,	175 35		
Repairs,	134 12		
Life boat,	111 00		
Ice,	103 48		
Bathing caps,	99 23		
Typewriter,	91 13		
Fire extinguishers, etc.,	70 97		
Tickets,	45 55		
Medicines and attendance,	42 82		
Telephones,	36 80		
Stationery and printing,	33 54		
Duck,	31 25		
Key rings,	28 29		
Baskets,	24 00		
Brooms,	21 84		
Findings,	17 97		
Wringers,	17 27		
Typewriter rental,	14 80		
Uniforms,	14 50		
Screens,	13 00		
Sprayers,	10 90		
Gauze,	9 82		
Metal polish,	9 75		
Dials for watchman's clock,	9 00		
Postage,	7 00		
Cap bands,	6 75		
Express,	4 45		
Spring water,	4 00		
Miscellaneous,	29 61		
	$33,742 58		
Amounts carried forward,	$33,742 58	$9,690 91	$191,633 55

Amounts brought forward,	$33,742 58	$9,690 91	$191,633 55
Service sheds,	9,993 23		
Water connection, stable,	79 16		
Loam,	48 88		
		43,863 85	
Stony Brook Reservation: —			
Water rates,	$46 00		
Repairs to buildings,	14 86		
		60 86	
Beaver Brook Reservation: —			
Signs,	$49 56		
		49 56	
Charles River, Upper Division: —			
Water supply and sewerage disposal, recreation grounds,	$671 33		
Band stand,	527 00		
Landing stage,	337 00		
One-half cost of fence,	63 75		
Landscape architects: —			
Services, $23 50			
Expenses, 14 24			
	37 74		
Water rates,	30 00		
		1,666 82	
Charles River, Lower Basin: —			
Granolithic walk,	$432 46		
Construction of entrance,	106 50		
Advertising case,	20 80		
Refund, rental,	16 76		
Cloth cover,	2 00		
		578 52	
Lynn Shore Reservation: —			
Wall,	$300 00		
Loam,	100 00		
Landscape architects: —			
Services, $17 27			
	17 27		
		417 27	
Blue Hills Parkway: —			
Granolithic walk,	$31 35		
Tarite,	7 80		
		39 15	
Middlesex Fells Parkway: —			
Substation,	$4,000 00		
Fire service, Wellington Bridge,	926 52		
Refunds on account of deposits for entrances,	464 50		
Construction of entrances,	104 84		
		5,495 86	
Mystic Valley Parkway: —			
Construction of entrances,	$265 15		
Repairs to buildings,	148 36		
Lighting Woburn Parkway,	91 71		
Refunds on account of deposits for entrances,	40 50		
Repairing roadway,	27 00		
Repairs, Cradock Bridge,	14 50		
		587 22	
Amounts carried forward,		$62,450 02	$191,633 55

Amounts brought forward,		$62,450 02	$191,633 55
Revere Beach Parkway: —			
Repairing roadway,	$298 72		
Loam,	100 00		
Fire service, Malden River Bridge,	97 00		
Refund on account of deposit for entrance,	35 00		
Landscape architects: —			
Services, $34 53			
	34 53		
		565 25	
Nahant Beach Parkway: —			
Bath-house: —			
Pay rolls,	$4,856 34		
Repairs and alterations,	625 75		
Water rates,	551 92		
Hardware,	374 64		
Stationery and printing,	232 08		
Lighting,	205 72		
Lumber, etc.,	170 15		
Valuable case,	140 00		
Coal,	117 50		
Towels,	90 83		
Telephones,	90 48		
Stockings,	90 00		
Turnstile and slips,	66 85		
Paint, etc.,	59 52		
Mirrors and frames,	55 20		
Cash register,	55 00		
State flags,	43 99		
Bathing caps,	40 00		
Key rings,	27 78		
Laundry,	17 43		
Ice,	11 20		
Cleaning cesspool,	10 00		
Uniform,	7 00		
Soap,	6 00		
Rolls for fountain,	6 00		
Engine room,	5 59		
Oil,	3 50		
Postage,	3 50		
Furnishings,	3 43		
Truck,	3 35		
Conveying sick person,	3 00		
Tickets,	3 00		
Dials,	2 64		
Bathing checks,	1 32		
Express,	1 10		
		7,981 81	
Fresh Pond Parkway: —			
Construction of entrance,	$84 00		
Landscape architects, services,	8 25		
		92 25	
Winthrop Parkway: —			
Repairing roadway,	$33 50		
		33 50	
Lynnway: —			
Fire service, Saugus River Bridge,	$240 08		
Landscape architects, services,	17 26		
		257 34	
Amounts carried forward,		$71,380 17	$191,633 55

Amounts brought forward,		$71,380 17	$119,633 55
Lynn Fells Parkway: —			
Reconstruction of culvert,	$705 75		
		705 75	
Old Colony Parkway: —			
Refund of rental,	$35 00		
Repairs of buildings,	18 55		
Boarding up old houses,	11 50		
		65 05	
Nantasket Beach Reservation: —			
Bath-house: —			
Pay rolls,	$8,890 36		
Bathing suits,	2,110 12		
Repairs and alterations,	1,212 74		
Coal,	819 91		
Water rates,	646 39		
Towels,	420 63		
Engine room,	416 16		
Report on changes in steam piping,	258 89		
Ash cans,	245 40		
Paint, etc.,	166 90		
Stationery and printing,	165 85		
Lighting,	150 60		
Medicines and attendance,	145 98		
Lumber, etc.,	138 65		
Lifeboat and fittings,	118 84		
Disinfectant,	95 85		
Soap,	77 18		
Laundry,	65 95		
Ice,	62 49		
Hardware,	60 68		
Bathing caps,	50 00		
Report on steam apportionment,	35 00		
Findings,	26 98		
Flags,	18 48		
Matting,	17 09		
Tickets,	16 65		
Laundry baskets,	16 56		
Employees' uniforms,	14 68		
Brooms, etc.,	14 09		
Cleaning cesspool,	10 00		
Hose,	10 00		
Combs,	2 09		
Bathing checks,	1 80		
	$16,502 99		
Repairs and alterations of buildings,	6,824 72		
Shore protection,	3,577 70		
Engineer's services,	465 00		
Fire protection,	355 38		
Signs,	104 20		
		27,829 99	
			99,980 96
Balance,			$91,652 59

Metropolitan Parks Trust Fund.

Balance, Dec. 1, 1915,	$1,180 41

Summary of General Expense for Year ending Nov. 30, 1915.

	Parks System Maintenance.	Parks Boulevard Maintenance.	Parks Expense Fund.	Parks Loan Fund.	Parks Loan Fund, Series II.	Total.
Commissioners,	$3,450 00	$3,634 00	-	-	-	$7,084 00
Office salaries,	9,168 72	10,112 63	-	-	-	19,281 35
Engineering,	9,769 87	10,013 13	$258 00	-	-	20,041 00
Police,	101,957 98	45,065 31	4,891 65	-	-	151,914 94
Rent and care, Boston office,	3,212 52	3,212 52	-	-	-	6,425 04
Lighting, Boston office,	118 10	80 80	-	-	-	198 90
Miscellaneous,	4,336 44	4,526 59	287 25	-	-	9,150 28
	$132,013 63	$76,644 98	$5,436 90	-	-	$214,095 51

Summary of Expenditures for Year ending Nov. 30, 1915.

	Metropolitan Parks Loan Fund.	Metropolitan Parks Loan Fund, Series II.	Metropolitan Parks System Maintenance.	Metropolitan Parks Boulevard Maintenance.	Metropolitan Parks Expense Fund.	Special Appropriations, Repairs, Construction and Investigations.	Band Concerts.	Totals.
Reservations: —								
Blue Hills,	$19,885 94	–	$91,574 87	–	$566 33	–	$1,686 65	$113,713 79
Beaver Brook,	499 64	–	3,871 81	–	49 56	–	–	4,421 01
Charles River, Upper Division,	18,618 73	–	43,446 25	–	1,666 82	$4,008 22	3,539 18	71,279 20
Lynn Shore,	–	–	7,753 03	–	417 27	–	–	8,170 30
Middlesex Fells,	7,433 92	–	59,629 88	–	2,971 12	–	3,437 94	73,472 86
Mystic River,	1,493 00	–	11,380 51	–	–	–	–	12,873 51
Neponset River,	–	–	2,800 97	–	–	–	–	2,800 97
Quincy Shore,	–	–	10,787 30	–	–	2,017 50	–	12,804 80
Revere Beach,	1,471 66	–	32,990 02	–	43,863 85	31,668 03	6,143 40	116,136 96
Stony Brook,	998 75	–	9,536 90	–	60 86	–	–	10,596 51
Winthrop Shore,	1,311 56	–	3,865 33	–	–	21,416 71	–	26,593 60
Weston Bridge,	393 18	–	–	–	–	–	–	393 18
General expense,	–	–	132,013 63	–	–	3,024 25[1] 1,874 23[2]	21 20	136,933 31
Totals,	$52,106 38	–	$409,650 50	–	$49,595 81	$64,008 94	$14,828 37	$590,190 00

[1] Pensions.

[2] Apportionment Commission.

Summary of Expenditures for Year ending Nov. 30, 1915 — Concluded.

	Metropolitan Parks Loan Fund.	Metropolitan Parks Loan Fund, Series II.	Metropolitan Parks System Maintenance.	Metropolitan Parks Boulevard Maintenance.	Metropolitan Parks Expense Fund.	Special Appropriations, Repairs, Construction and Investigations.	Band Concerts.	Totals.
Parkways: —								
Alewife Brook,	–	$159 85	–	$471 72	–	–	–	$631 57
Arlington Parkway,	–	4,035 12	–	–	–	–	–	4,035 12
Blue Hills,	–	–	–	10,703 50	$39 15	–	–	10,742 65
Dedham,	–	11,640 34	–	–	–	–	–	11,640 34
Fresh Pond,	–	1,010 38	–	2,856 44	92 25	–	–	3,959 07
Furnace Brook,	–	36,188 27	–	5,934 53	–	–	–	42,122 80
Hammond Pond,	–	12,456 37	–	200 00	–	–	–	12,656 37
Lynn Fells,	–	–	–	6,735 69	705 75	–	–	7,441 44
Lynnway,	–	–	–	6,620 47	257 34	–	–	6,877 81
Middlesex Fells,	–	14,807 46	–	30,036 78	5,495 86	–	–	50,340 10
Middlesex Fells Roads,	–	3,988 18	–	15,832 74	–	–	–	19,820 92
Mystic Valley,	–	61,268 81	–	30,071 41	587 22	–	–	91,927 44
Nahant Beach,	–	1,000 00	–	6,912 91	7,981 81	–	$2,023 20	17,917 92
Neponset River,	–	–	–	1,306 13	–	–	–	1,306 13
Old Colony,	–	49,840 27	–	–	65 05	–	–	49,905 32
Quannapowitt,	–	656 82	–	–	–	–	–	656 82

Revere Beach,	–	10,527 40	–	37,759 65	565 25	–	–	48,852 30
Vose's Grove,	–	2 00	–	–	–	–	–	2 00
West Roxbury,	–	–	–	–	–	2,471 31	–	2,471 31
Winthrop,	–	11,219 17	–	839 20	33 50	–	–	12,091 87
Woburn,	–	3,170 03	–	7,643 14	–	–	–	10,813 17
Neponset Bridge,	–	858 90	–	–	–	–	–	858 90
General expenses,	–	–	–	76,644 98	6,153 46	–	–	82,798 44
Totals,	–	$222,829 37	–	$240,569 29	$21,976 64	$2,471 31	$2,023 20	$489,869 81
Nantasket Beach Reservation,	–	–	–	–	27,829 99	6,000 00 33,859 78[1]	6,949 80	74,639 57
Wellington Bridge,	–	91,649 19	–	–	–	8,757 63[1]	–	100,406 82
Charles River Basin,	–	–	–	–	578 52	37,928 72[2] 125,835 73[1]	1,198 63	165,541 60
Lars Anderson Bridge Fund,	–	–	–	–	–	6,086 43	–	6,086 43
North Beacon Street Bridge Loan,	–	–	–	–	–	7,015 99	–	7,015 99
Grand totals,	$52,106 38	$314,478 56	$409,650 50	$240,569 29	$99,080 96	$291,964 53	$25,000 00	$1,433,750 22

[1] Maintenance.

[2] Loan.

APPENDIX.

APPENDIX 1.

REPORT OF THE JOINT COMMITTEE, CONSISTING OF THE METROPOLITAN PARK COMMISSION AND THE STATE HIGHWAY COMMISSION, REQUIRED BY CHAPTER 64 OF THE RESOLVES OF THE YEAR 1915 TO REPORT AS TO OCEAN AVENUE IN THE CITY OF REVERE.

To the Honorable Senate and House of Representatives.

The joint committee, consisting of the Metropolitan Park Commission and the State Highway Commission, required by chapter 64 of the Resolves of the year 1915 to report as to Ocean Avenue in the city of Revere, beg leave to report as follows.

The resolve, chapter 64 of 1915, under which this report is made is as follows: —

CHAPTER 64.

RESOLVE PROVIDING FOR AN INVESTIGATION BY THE METROPOLITAN PARK COMMISSION AND THE MASSACHUSETTS HIGHWAY COMMISSION RELATIVE TO OCEAN AVENUE IN THE CITY OF REVERE.

Resolved, That the metropolitan park commission and the Massachusetts highway commission, sitting as a joint board, are hereby directed to investigate the desirability of making that part of Ocean avenue in the city of Revere, extending from Elliot circle to Revere street, a metropolitan boulevard or parkway or a state highway, and the probable cost of making the said avenue either a metropolitan boulevard or parkway or a state highway. The joint board shall report the result of its investigation to the next general court on or before the second Wednesday of January, with such recommendations as it may deem expedient. [*Approved April 26, 1915.*

In pursuance of this resolve the Metropolitan Park Commission and the Massachusetts State Highway Commission met and organized as a Joint Board on June 23, 1915, and designated the chairman and secretary of the Park Board as chairman and secretary of the Joint Board, and the engineers of the two Boards as engineers of the Joint Board. A duly advertised public

hearing was held at the State House on July 13, 1915, at which the representative from Revere in the General Court, the mayor and other officials of the city of Revere, representatives of property owners along Ocean Avenue and of the Bay State Street Railway Company, having a location in Ocean Avenue, and other citizens having various interests, appeared and were heard. A plan for improvement of Ocean Avenue was presented at this hearing by citizens interested in the matter. Subsequently another plan was presented by the same persons, and both plans have received careful consideration. At a subsequent meeting of the Joint Board the matter was referred to a subcommittee and to the engineers for a further investigation, and their reports and further examinations and investigations made by members of the Board generally have been before the Joint Board.

Ocean Avenue, referred to in the resolve, is a highway of the city of Revere, running parallel to and an average distance of about 100 feet west of the driveway of Revere Beach Reservation from its southerly terminus of Charles Eliot Circle to Revere Street, a distance of about 1 mile. It is the only highway extending throughout the length of this portion of the city of Revere which was in a measure set off and made subordinate in its development to that of Revere Beach Reservation when the Reservation was acquired in 1895 as a metropolitan park, and its development begun by removing the steam railroad from the crest of the beach to its present location about 600 feet further west. Ocean Avenue is 50 feet wide, without curbing or paving. Its surface is in bad repair and so low that the drainage is poor. Telegraph, telephone and electric car poles and wires and double electric car tracks are located above ground through its entire length.

At the outset, therefore, it is evident that Ocean Avenue is a highway which it is the legal duty of the city of Revere to maintain, and that only some equity arising out of a burden already placed upon this highway by the Commonwealth or the Metropolitan District, or the opportunity for securing a benefit for the Commonwealth and District beyond that which it is the duty of Revere to provide, would warrant taking the duty of maintaining Ocean Avenue from the city of Revere and placing it upon some other body of citizens either by making it a State highway or a metropolitan parkway. The obvious purpose of the resolve is, therefore, that of directing this Joint Board to ascertain whether an equitable obligation exists, or whether a greater benefit may be brought about, which warrants making Ocean Avenue either a State highway or a metropolitan parkway.

Ocean Avenue was a public highway before there were State highways or metropolitan parks and parkways. It then ran along back of and below the grade of the entire length of the crest of Revere Beach. It was reached by only a few roads from the landward side, and at its northerly end had no outlet toward Lynn. When Revere Beach was made a metropolitan park and a driveway was built along its crest in 1895, Ocean Avenue for 2 miles north of Revere Street was absorbed in this driveway, and Revere was relieved of its maintenance. At the same time other roads leading to Ocean Avenue and the beach were rebuilt with bridges over the tracks of the railroad in its new location, and left in better condition than before the changes were made. The general highway situation was as good as before the Reservation was acquired, and the expense of maintenance to Revere was lessened.

Soon after the construction of the park driveway, there arose a demand, however, for ways better suited for pleasure to the Reservation than those provided by the highways. Almost coincident with this demand came a demand also for additional highway connections between Essex County and Boston. At that time the only direct through highway between Boston and the northeastern part of the State was the Salem Turnpike, passing through Revere not over 1 mile west of Revere Beach, under the name of Broadway. As a result of this demand the Metropolitan Park Commission was authorized to build Revere Beach Parkway from Middlesex Fells Parkway near Wellington Bridge at Mystic River and Broadway Park, Somerville, to the southerly end of Revere Beach at Charles Eliot Circle, a distance of about 6 miles; and Lynnway from the northerly end of Revere Beach to and across Saugus River to Lynn Shore. About the same time the State Highway Commission was authorized to build parts of a continuous State highway from Essex County to East Boston, to be known as the North Shore highway, and to assist this project the city of Boston built Bennington Street from East Boston to Orient Heights. The State Highway Commission built from Bennington Street to the Beachmont part of Revere and a connection across the Revere Beach Parkway with Ocean Avenue, and, on the northerly side of Saugus River, from the bridge built by the Metropolitan Park Commission to Commercial Street in Lynn; and the city of Lynn built an extension from Commercial Street to Market Street in the center of the city. These highways and parkways all made connection with the driveway along Revere Beach, and so provided a boulevard

of excellent surface and with such variety of scenery as to make it one of the most notable driveways of the world. Pleasure travel immediately took possession of it, and its use has constantly increased. This boulevard, partly highway and partly parkway, did not, however, satisfy the demand for the North Shore highway because there still remained unsatisfied the demand for a highway for traffic uses. The project had contemplated a continuation from Saugus River Bridge, between the railroad and the beach driveway, to Revere, and thence by Ocean Avenue to the previously built piece of State highway at Beachmont. Development of Revere Beach and its driveway as a park and pleasure way, and the enormous increase in pleasure travel resulting from the coming into use of automobiles, led the State Highway Commission, however, to restudy the plans for completing the North Shore highway; and when a further appropriation became available it was deemed best to abandon the location previously advocated and build from Saugus River Bridge to Revere Street upon a new location, crossing the railroad near Saugus River and thence upon the westerly side of the railroad as part of a new plan, which, fully carried out, would continue the highway west of the railroad to Winthrop Avenue beyond the junction of Revere Beach Parkway with the Revere Beach Driveway. From this point connection could then be made by Winthrop Avenue with the State highway, and so avoid the immediate neighborhood of Revere Beach and Ocean Avenue. This plan had the further advantage of providing a freer route for all classes of long-distance travel and of opening up for use and consequent increase of taxable value to Revere great areas of marshland suitable for manufacturing or for dwellings, and of giving the opportunity at Winthrop Avenue of connection with the highways which would be likely to be built across the marshland between Winthrop Avenue and Orient Heights. In pursuance of this plan the State highway has been built, and is now in use from Saugus River Bridge to Revere Street on the westerly side of the railroad tracks, and for extension to Winthrop Avenue only awaits further appropriation.

Upon these facts this Board is of the opinion that the plan of the State Highway Commission is based upon a far-reaching conclusion as to the traffic needs of the Commonwealth and especially of Essex County, and ought to be fully provided for at as early a date as possible. Until the extension from Revere Street to Winthrop Avenue is provided for, Ocean Avenue is

likely to be used for State highway travel, but this will be only a temporary use. It would be inadvisable to postpone the day of constructing this extension by diverting public attention from the completion of this project, or diverting to an improvement of Ocean Avenue State highway funds which might otherwise be used for completing the North Shore highway project. What has been done already has added to Revere far beyond the burden placed upon it, and what remains to be done will add an even greater benefit, as it will add another great radial highway through the part of the city most likely to develop in a haphazard way, and therefore in a way less likely to add permanent value to the city. Moreover, the business welfare of the city of Boston and of Essex County calls for the early completion of the North Shore highway. For these reasons this Joint Board cannot recommend making Ocean Avenue a State highway, even for the purpose of securing its early improvement.

Consideration of the further requirement of the resolve as to the advisability of making Ocean Avenue a metropolitan parkway or boulevard has involved an even wider range of inquiry. There is nothing in the appearance or immediate surroundings of Ocean Avenue to suggest its fitness for a metropolitan parkway or boulevard. It is unattractive, poorly built and maintained, bordered by ill-kept and many of them hideous structures. As a roadway it is burdened by city grants and utilities, all of which have been created by the city and pay taxes to the city of Revere. When the driveway along the crest of Revere Beach Reservation was built, the maintenance of 2 miles of Ocean Avenue was taken from the city and assumed by the Metropolitan Parks District. In the twenty years since this was done the gross value of property along the driveway paying taxes to the city of Revere has greatly increased. The building of the parkway has taken the normal increase of pleasure travel from the streets of Revere, relieving the city of expense of maintenance and adding to the taxable value of near-by property. This Board can see no equity in favor of the city of Revere as against the Commonwealth or the Parks District because of anything that has been done by either.

Revere Beach was acquired as a metropolitan park, and developed by construction of the driveway along its entire length in 1895. No such great seaside park project had ever been carried out in this country, and its development drew the appreciative attention of all parts of the world. The plan for this work

seemed to the public very liberal, and the demand for increased facilities for reaching the park attested this immediate approval. Yet big and broad as the plan was, it was not as ample as the Metropolitan Park Commission of that time would have liked to suggest and would undoubtedly have suggested, except for the limitation made by the fear of too far taxing public willingness and ability to follow. The Commission at that time would have liked to suggest acquirement of the entire territory between the beach and the new location of the railroad, or at least the development of its street and placing it under restrictions, but this would have required an expenditure which it was feared would be prohibitive. The development of the beach front and the great and increasing use made of the Reservation, and the limitations to the completeness of its usefulness, however, are now making themselves felt. Fortunately, however, the development outside of the immediate front of the beach has been so poor that it still places very little burden upon the District to carry out the plan in all the fullness with which it might have been carried out in 1895. The increased expense, if any, of now carrying it out will be less than would have been the interest upon the expenditure made in 1895. The conditions have so radically changed, however, in every way that it is no longer safe to postpone the improvement. In 1895 the Metropolitan Parks District had a population of 890,000, — it now has a population of upwards of 1,500,000. At that time there were no automobiles in use, — there are now over 110,000 motor vehicles and about 9,500 motor cycles registered in this State alone. These changes in population and in pleasure vehicle travel have not only greatly increased the number of those who drive for pleasure, but have so widened the range of pleasure vehicle travel that it comes from all parts of the State to Revere Beach and from without the State. Many of those who daily traveled back and forth to business by train now go by automobile, and those who extended their pleasure drives only a few miles from home now go much longer distances, even from State to State. Revere Beach has become such a great objective for this pleasure travel, and the building of the driveway and parkways has made it so much the favored route for long-distance and interstate automobile travel, that if no other use were made of the Reservation driveway it would at times overcrowd it. But the number of those who go by the steam railroad and electric cars to Revere Beach and use it as a park and pleasure resort has also

so greatly increased that on pleasant days in summer the normal number of pleasure seekers on foot is upwards of 100,000 between Charles Eliot Circle and Revere Street. As a result it has come to be possible to guard those on foot only by excluding automobile and other pleasure vehicle travel from the driveway of Revere Beach between Charles Eliot Circle and Revere Street on Saturdays, Sundays and holidays. At such times all pleasure vehicles must stay away from the neighborhood of Revere Beach or else pass by the portion which is closed to their travel over Ocean Avenue. This is a serious inconvenience to all such travel, and a serious limitation upon the completeness and usefulness of the parkways and driveways leading to the beach, upon which so much has already been expended.

The real question with which this report is concerned is whether the volume of the pleasure travel is of a size to warrant a serious effort to provide for it by improvement and a connection outside the Revere Beach Driveway beyond what the city of Revere can be reasonably required to provide for by its highways, and, if so, by what measures and at what expense such provision can be best made.

The pleasure vehicle travel which seeks to use Ocean Avenue is now chiefly automobile travel of two classes, the long-distance travel which is bound for points beyond Revere Beach, and the short-distance travel which merely seeks to reach Revere Beach as its objective. The long-distance travel will be in some measure provided for when the North Shore highway is extended to Winthrop Avenue, but a large part of even this travel will wish to reach the neighborhood of the beach for a brief stop, or for the opportunity of passing over the part of the beach driveway beyond Revere Street which is likely to remain open for pleasure travel. The short-distance pleasure travel, which is a large part of the travel, must stay away or use Ocean Avenue, because those who are out merely for the pleasure of going to the beach want to leave their automobiles on the beach or within close reach of it, in order that they may visit the crowded part of the beach and enjoy the amusements or buy at shops or eat at the restaurants and cafés. This class of automobilists is not merely a limited class of rich people. It includes a great part of the public, many of whom operate their own automobiles and have no other time for such pleasure than in the intervals of business on Saturdays, Sundays and holidays. It is a serious matter to them if they cannot go to the beach in comfort at

such times, and their patronage is a valuable one for those who are in the business of providing amusements, shops and eating places at Revere Beach. If there is a good roadway passing in the immediate neighborhood of the beach, the land between the beach and the railroad will also come into development, to provide garage and storage ground for automobiles while their owners are at the beach. The automobilists have as legitimate a right to expect to be provided for as those who go to the beach by the railroad and the street cars.

If the measure necessary to provide for this pleasure vehicle travel were merely that of putting Ocean Avenue in good repair, it would be the duty of the city of Revere alone to do this, and that city apparently might be compelled under existing laws applicable to all highways to make this improvement, but more is required. Ocean Avenue is not only in bad repair, but it is also so occupied by electric car tracks and by the cars which must use their tracks to transport the crowds which go by them to Revere Beach that there is barely room for a single other vehicle to pass between the cars and the sidewalks; nor is that all. Ocean Avenue is not merely a street through which car tracks pass, it is the terminal for these cars, and at times throughout the day and night in summer, throngs of men, women and children have filled the roadway as well as the sidewalk, hurrying to get to and from the cars. At such times the effort of automobiles to get through Ocean Avenue is not only tedious and wearing, but a danger to human life. There is no other highway through this part of Revere, so all this discomfort and risk must be endured or automobiles and other pleasure vehicles must stay away, even if the road surface is put in good repair. The part of Revere between the beach and the railroad, through which Ocean Avenue is now the only through highway, is 1 mile in length and an average of 400 feet in width. The properties abutting on Ocean Avenue extend through to the beach, and are on an average about 100 feet in width. Those on the westerly side of Ocean Avenue vary in width from a few feet to a depth so great that they can be utilized only for amusements requiring great area or by placing buildings in the rear of those fronting on the avenue. The development of these lands has not kept pace with that along the beach, and is so poor that this territory is a menace to the welfare of those who go to the beach expecting to find only what is good. This menace will become greater as the region becomes congested with buildings, unless a

better highway development is provided for, and limitations are placed upon the use of the property which will prevent its use for the sale of liquor in the not impossible event of a vote by the city of Revere to authorize the granting of liquor licenses.

Having all these facts in mind, this Joint Board has reached the conclusion that a decision as to the advisability of making Ocean Avenue a metropolitan parkway or boulevard is dependent upon the feasibility of making an improvement in the highway condition throughout the entire section between the beach and the railroad which will provide adequately for all classes of travel, and also for a development of the region suitable to its nearness to Revere Beach as the public park of greatest resort in the Metropolitan Parks District. As has already been stated, citizens interested in the development and prosperity of the beach front and its neighborhood submitted a plan, at the public hearing on this question, which provided merely for a widening of Ocean Avenue, but subsequently modified their suggestions by another plan which suggested, instead of this widening, the extension of Baker Avenue, another parallel highway which runs for a short distance next the railroad, and a partial relocation of the electric car tracks. These plans have been carefully examined, and it is interesting that the movement of public opinion indicated by the change in these two plans in large measure coincides with the idea which has dominated this Board in reaching its conclusion as to the plan most adequate for accomplishing the improvement which it has come to deem necessary and which it submits with this report, together with a bill, which, if passed by the Legislature, will provide for securing the desired results.

The general features of the plan arrived at and recommended by this Joint Board are as follows: —

Ocean Avenue is widened from Revere Beach Parkway to Beach Street. From this point a short piece of new highway connects with Baker Avenue, a public way running beside the railroad for some distance, which was cut off from outlet at its southerly end and had no outlet at its northerly end when the railroad was relocated in 1895, and has since become almost unused and impassable. Baker Avenue, thus given an outlet to the south, is also extended from its present northerly terminus to a junction with Ocean Avenue, and Ocean Avenue is widened from this point to its junction with Revere Street. The electric car tracks are removed from their present location, throughout the entire length of Ocean Avenue, to a new location in Ocean

Avenue widened between Revere Beach Parkway and Beach Street, and thence to a location in Baker Avenue extended and rebuilt to a connection with their present tracks at the junction of Ocean Avenue and Revere Street. Adequate landing places for electric car passengers are provided near Revere Beach Parkway and Charles Eliot Circle, between Shirley Avenue and Beach Street, at Chester Avenue, and at Revere Street, and opportunity is given for track connection with a storage terminal and station ground which has been recently acquired by the street railway company. Ocean Avenue is widened on the westerly side from Revere Beach Parkway to Beach Street, where there are practically no buildings, and cleared of car tracks the rest of the distance to Revere Street, leaving a width sufficient for four lines of vehicles, or for vehicles standing at the sidewalk line on either side and two moving lines of such vehicles through the center of the roadway. Ocean Avenue is rebuilt, curbed and paved. Baker Avenue is built and resurfaced to conform to the usual standard of highways.

The direct results which would be secured by the adoption and carrying out of this plan would be that the electric cars would be operated for most of the distance through a highway in which there would be very little other travel, and would have landing places for passengers away from any unusual street travel, and these landing places would be practically no further from the beach, which is the general objective of all street railway passengers, than the present line of tracks. The way to the beach for these passengers would be by sidewalks of cross streets, so that the lines of foot passengers would cross Ocean Avenue and the line of pleasure vehicle travel at right angles, and at definite points where both lines of travel could be regulated and protected with greatest regard to economy and safety. As all of these electric car passengers are destined for the beach, there would be no resulting diminution of the numbers at the beach or of the patronage to the amusements and other properties at the beach. Ocean Avenue would be substantially free for automobiles and other pleasure travel, and those using them could stop at points between the cross streets and reach the beach or the amusements either directly through rear entrances or by the usual street entrances to the beach driveway. Ocean Avenue would not be so wide as to suggest fast driving or to make any unusual difficulty in regulating the travel over it.

The cost of carrying out this plan is less than that of carrying

out a plan for merely widening and rebuilding Ocean Avenue, as appears from the following comparative statement: —

According to the plan recommended by the Board, the land and buildings to be acquired are estimated to cost $220,000; extending and rebuilding Baker Avenue, $50,000; rebuilding Ocean Avenue with parkway surface, $60,000; rebuilding the car lines, $66,000; a total of $396,000; or, if wood block pavement were used on Ocean Avenue, the additional cost would be $55,000, or a total of $451,000. If granolithic sidewalks were omitted on Ocean Avenue, the cost would be reduced $10,000.

According to the plan of widening Ocean Avenue and relocating the car tracks therein, the estimated total cost with wood block pavement, which would be the only possible satisfactory pavement in such case, would be $605,000, or, if the granolithic sidewalks were omitted, $585,000.

Upon all these facts the Commission is of the opinion that the improvement according to the plan submitted would be a public benefit beyond that which the city of Revere could be expected to provide, and sufficient to warrant its being made largely at the expense of the public outside of Revere Beach, provided it can be accompanied by limitations which seem necessary to ensure the permanency of the improvement and the protection of the neighborhood of the beach, and to provide the funds for this improvement, and apportion them with reasonable regard for the benefit accruing to the public, it is recommended that the funds be provided in the first instance under the metropolitan parkway act, chapter 288 of the Acts of 1894, that is, by an appropriation in addition to Metropolitan Parks Loan, Series Two, and that the same be repaid to the Commonwealth as follows: —

The cost of removing the street car tracks, by the street railway company, with interest until paid at 4 per cent., in six annual payments; the balance of the expense in the following proportions: one-third with interest at 4 per cent. until paid by the city of Revere, and two-thirds by those who, under chapter 288 of the Acts of 1894, contribute to the repayment of the Metropolitan Parks Loan, Series Two, that is, one-half by the cities and towns of the Metropolitan Parks District and one-half by the State at large.

It is further recommended that upon completion the highway be maintained by the city of Revere, subject to the limitation that no street railway location may be granted in Ocean Avenue

between Beach Street and the junction of Baker Avenue with Ocean Avenue near Revere Street, and that no license for the sale of liquor may be granted within 600 feet of the driveway along Revere Beach.

All of which, with the plan and bill for carrying out this report, are respectfully submitted and recommended.

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EVERETT C. BENTON,
CHARLES J. BARTON,
Metropolitan Park Commission.

WM. D. SOHIER,
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JAMES W. SYNAN,
Massachusetts Highway Commission.

APPENDIX.

AN ACT TO PROVIDE FOR THE IMPROVEMENT OF OCEAN AVENUE NEAR REVERE BEACH RESERVATION, AND FOR THE CONVENIENCE AND SAFETY OF PUBLIC ACCESS TO SAID RESERVATION.

SECTION 1. The metropolitan park commission shall, substantially in accordance with the recommendations and plan submitted in the report under chapter sixty-four of the resolves of the year nineteen hundred and fifteen, lay out and widen Ocean avenue in the city of Revere on the westerly side of said avenue between Revere Beach parkway and Beach street to a total width of at least sixty-three feet, and reconstruct said street as thus widened from said parkway to Revere street; shall lay out and construct Baker avenue in said city as a city street or way to a width of fifty feet, and shall lay out and construct an extension of said Baker avenue of the same width northerly along or near the location of the Boston, Revere Beach and Lynn Railroad Company to a point on Revere street, at or near Ocean avenue, and shall also lay out and construct an extension of said Baker avenue of the width of fifty feet southerly to a junction with said Beach street, near Ocean avenue.

SECTION 2. Said commission shall remove the existing tracks and other equipment of the street railway company in said Ocean avenue between said parkway and Revere street, and relocate the same on the westerly side of Ocean avenue widened as above provided from said parkway to Beach street, and thence across Beach street to and over Baker avenue located and extended as above provided to a connection with the tracks of the street railway company now in said Revere street. Said new location of tracks shall be deemed a substitute for the existing railway location in Ocean avenue, and, upon certification of completion of the work provided for in this act as hereinafter set forth, shall be held and used as a street railway location by said company subject to the same terms, conditions and obligations, as now apply to the existing location, so far as consistent with the requirements of this act, and so much of the existing location of said street railway company as now lies in Ocean avenue, between Revere Beach parkway and Revere street, shall thereafter be deemed to have been revoked, and no street railway location shall thereafter be granted in said Ocean avenue. Said commission may during the progress of the work hereunder, provide such temporary locations for said tracks as it may deem reasonable for the accommodation of public travel.

SECTION 3. Before said commission shall have begun the work herein authorized, or, if said commission approves, concurrently with the prose-

cution of the work herein required of said commission, the city of Revere shall cause all water, sewer and gas pipes, and all conduits, poles and wires, except street railway conduits, poles and wires, in that portion of Ocean avenue between said parkway and Revere street, to be renewed or relaid at its expense or at the expense of individuals or corporations owning and using the same, in a manner and in locations approved by said commission. If, however, said commission and the mayor of said city shall agree that the work of relaying and renewing said pipes, conduits, poles and wires shall be done by said commission, or if, in the opinion of said commission, said city unreasonably delays the beginning or prosecution of said work, then said commission may assume the performance or completion of said work, and the cost thereof as certified by said commission to the treasurer and receiver-general shall be paid out of the ordinary revenues of the commonwealth, and the treasurer and receiver-general shall include such cost in the next annual state tax thereafter of said city of Revere.

SECTION 4. Said commission shall notify the mayor of said city in writing of the date on which the commission intends to begin the work herein provided for, and on and after such date and until the certification of the completion of the work as provided for in section five, said commission shall have sole responsibility for the policing and control of said work, and authority to exclude public travel from so much of said work and for so long as it may deem necessary for the proper performance of the same. The cost to the commonwealth of said policing and of additional policing on land of the commonwealth caused by said work shall be deemed as a part of the cost of laying out and constructing said streets to be paid by said city and the metropolitan parks district in the manner hereinafter set forth.

SECTION 5. When the work of laying out and constructing said street shall have been completed, said commission shall so certify in writing to the mayor of said city and thereafter said city shall police and maintain said streets and have the same authority over and liabilities in respect to the same as it then has in respect to all other streets or ways of said city, and thereafter no licenses shall be granted for the sale of intoxicating liquors in any building or place within six hundred feet of Revere Beach reservation.

SECTION 6. For the purpose of carrying out the provisions of this act, said metropolitan park commission shall have the same power to take and acquire in the name of the commonwealth lands and rights therein, including parts of the station lots of the Boston, Revere Beach and Lynn Railroad Company between Beach street and Shirley avenue and at Revere street in said city, as is conferred upon said board by chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four: *provided, however*, that no concurrence of any other board or authority shall be necessary to give validity and effect to any taking made hereunder. Said commission shall also have the power to deter-

mine the value of and assess upon real estate the amount of betterments accruing to said real estate by the locating and laying out, widening and construction of streets herein authorized, together with the right to collect or abate the same, as is conferred upon said board by said chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four, and acts in addition thereto and in amendment thereof. Any betterments collected hereunder shall be credited by the treasurer and receiver-general to the fund provided for the payment of the interest and sinking fund charges of the loans issued under authority of this act. Said board shall estimate and determine as near as may be all damages sustained by any person or corporation by the taking of land or right therein under this act; but any one aggrieved by such determination of the board may have such damages assessed by jury of the superior court in the same manner as is provided by law with respect to damages sustained by reason of the laying out of ways, but no suit for such damages shall be brought after the expiration of one year from the date of the recording of any taking made hereunder.

SECTION 7. When the work of construction authorized by this act shall have been completed, said metropolitan park commission shall certify to the treasurer and receiver-general, as separate items, the cost of removal of tracks, poles, wires and other equipment and of constructing and equipping for operation the new street railway location herein provided for, and also the cost of doing all other work, payment for which has not been elsewhere provided for in this act. The cost of the work of removing the tracks, wires, poles and other equipment of said street railway location and of constructing and equipping said new location, together with any interest on any money borrowed for the purpose, shall be repaid to the commonwealth in six annual installments thereafter by the Bay State Street Railway Company or its successor or assigns. The remainder of the cost referred to in this section together with all sums paid for the acquirement of lands or rights in land and incidental expenses in connection therewith, shall be repaid as follows: — Thirty-three and one third per cent by the city of Revere and sixty-six and two thirds per cent in the same manner as expenditures made from appropriations authorized to carry out the provisions of said chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four, and acts in addition thereto and in amendment thereof.

SECTION 8. To meet the expenses incurred under the provisions of this act, the treasurer and receiver-general is hereby authorized to issue bonds or certificates of indebtedness to an amount not exceeding four hundred and fifty thousand dollars as an addition to the amounts already authorized under the provisions of chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four, and acts in addition thereto and in amendment thereof as part of metropolitan parks loan, series two. Such bonds or certificates of indebtedness shall be issued as coupon or registered bonds, and shall bear interest at a rate not exceeding

four per cent per annum, payable semi-annually on the first days of January and July of each year.

SECTION 9. When all the work of construction authorized by this act shall have been completed, the treasurer and receiver-general shall annually thereafter include in the sum charged to the city of Boston in the apportionment and assessment of its state tax, such proportion of the amount to be paid by said city as may be necessary to provide for the payment of the serial bonds issued to provide for money necessary to carry out this act next maturing, together with the amount necessary to provide for the proportion of the interest requirements to be paid by said city. The remaining requirements for serial bonds and interest payments shall be determined, collected and paid in the manner set forth in chapter four hundred and nineteen of the acts of the year eighteen hundred and ninety-nine to meet the interest and sinking fund requirements of loans or appropriations authorized to carry out the purpose of chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four, and acts in addition thereto and in amendment thereof. Payment of its proportionate part of the cost of the work, as determined in this act, by the Bay State Street Railway Company or such other company as has a location on said streets, shall constitute one of the terms and conditions under which said company shall hold its location thereon, and failure to make such payment within ninety days after certification by the state treasurer, as above provided, of amount due from said company shall of itself operate as a revocation of the location upon said streets.

SECTION 10. This act shall take effect upon its passage.

APPENDIX 2.

REPORT OF THE METROPOLITAN PARK COMMISSION ON THE COST OF EXTENDING WOBURN PARKWAY IN THE TOWN OF WINCHESTER.

To the Honorable Senate and House of Representatives.

The Metropolitan Park Commission, required by chapter 87 of the Resolves of 1915 to report as to extending Woburn Parkway from Pond Street to Wildwood Street, or some other point which will furnish a through connection with the Mystic Valley Parkway, beg leave to report as follows: —

The resolve, chapter 87 of the Resolves of 1915, under which this report is made, is as follows: —

CHAPTER 87.

RESOLVE PROVIDING FOR AN INVESTIGATION OF THE COST OF EXTENDING THE WOBURN PARKWAY IN THE TOWN OF WINCHESTER.

Resolved, That the metropolitan park commission be directed to investigate and report to the next general court on or before the second Monday in January, the cost of acquiring land for and constructing an extension of the Woburn parkway from Pond street to Wildwood street in the town of Winchester, or to such other street or point in said town as will furnish a through connection with the Mystic Valley parkway. [*Approved May 10, 1915.*

Woburn Parkway has recently been constructed and opened to travel southerly from Pleasant Street in Woburn, near the center of the city of Woburn, along the westerly shore of Horn Pond to Pond Street in the town of Winchester. Pond Street runs east and west at right angles to the Parkway from Main Street in Woburn to Cambridge Street in Winchester, a distance of approximately 1½ miles. Main Street is the chief highway between Woburn and Winchester. Cambridge Street is the main highway from Arlington past the westerly side of Mystic Lake and thence northerly to Burlington and Lowell. Between these two streets, a distance of over a mile, there is no highway or other well-built road south to Winchester, although one of the most attractive portions of Winchester is rapidly developing in that neighborhood, and is already well built over to within a

distance of 1,000 feet of the southerly end of Woburn Parkway. Immediately south of Pond Street and the end of Woburn Parkway the land is still in the rough, but is soon to be developed for building lots. It falls sharply from Pond Street, with some good trees, slopes and ledges to Winter Pond, which appears to be fed by springs, and then becomes part of the level plateau of the northerly part of Winchester. This level plateau has been almost entirely built over with attractive houses and well laid out, moderate sized grounds, which make it one of the pleasantest developments of modern suburban growth. The streets through this section are well built, and the houses are set back from the street lines. Wildwood Street is one of the best of these streets, varying from 40 to 50 feet in width, but with the appearance of much greater width because of the setback of the houses. It extends from Cambridge Street northeasterly in a direction generally parallel to Pond Street to a point about 600 feet southeast of Winter Pond, and then runs southeasterly in a somewhat broken course to Church Street, a broad street from the center of the town to Bacon Street, which is a broad street running across the town from Cambridge Street, crossing the Mystic Valley Parkway to Main Street on the easterly side of the town. Wildwood Street also connects with Central Street, which enters the extensive estate known as Rangeley and the home estate of the late Edwin Ginn on Bacon Street opposite the portion of the Mystic Valley Parkway on the westerly side of the railroad tracks. Wildwood Street towards Cambridge Street also passes the end of Wedgmere Avenue, about 1,000 feet from Winter Pond, an unusually broad street running parallel to and about 500 feet from Cambridge Street to Church Street at a point about 1,500 feet north from land forming part of the lands held by this Board along Mystic Lake.

Pond Street is a country road of irregular course and for part of its length poorly built and maintained. It has few houses and no promise of immediate improvement. Wildwood Street is an excellent town street connecting with many other streets leading in directions in which through travel seeks an outlet. An extension of Woburn Parkway to Wildwood Street would be a great convenience to through travel, and would vastly increase the usefulness of the Parkway and give to the city of Woburn and to the owners of land along the Parkway, who in many instances contributed their land for the construction of the Parkway, the full value of the parkway, which they do not now receive.

The language of the resolve, however, indicates plainly that

the purpose of the resolve is to require a report which shall not merely consider the extension of Woburn Parkway to Wildwood Street, but also the broader matter of the feasibility of making the extension in such form or to such other point as would lead to or at once provide for a through connection with Mystic Valley Parkway; and as Mystic Valley Parkway connects with the driveways down Mystic River which are ultimately to extend to a connection with Middlesex Fells Parkway and Revere Beach Parkway and with parkways by Alewife Brook to Fresh Pond Parkway and the drives along Charles River into Boston, it is not extending the intent of the resolve to consider the feasibility of a connection with Mystic Valley Parkway as a means of making these parkways form one great parkway for the northeasterly part of the District as far as Woburn, where connection may be easily made by a slight extension with the State highways leading to Lowell and thence on to the larger cities of New Hampshire.

The lands for all of these parkways are now in the control of the Metropolitan Park Commission, except that required for a connection between Mystic Valley Parkway and Woburn Parkway, and construction has already been completed or authorized over the major part of the distance. The distance between Mystic Valley Parkway and Woburn Parkway for which the land is not in public ownership is a little over one mile.

It needs no elaborate description to make known the beauty of the parkway drives along Charles River, Mystic River and the Mystic Lakes. The portion of Alewife Brook Parkway, to be built from Mystic River to Massachusetts Avenue in Cambridge during the year 1916, will add to the convenience of those using these other parkways, and will soon have a beauty promised by the already improved condition of Alewife Brook, which has been made more attractive by the improvement of that brook. Woburn Parkway is as yet little known, but it has a great beauty, with Horn Pond on one side and 1½ miles of attractive woodland on the other side almost to the center of Woburn. Woburn is one of the considerable sized cities of the District which was approachable from the center of the District by only one highway before the Parkway was built. A connection between Woburn Parkway and Mystic Valley Parkway is very important to that city and to the completeness of some twenty miles of other parkways already provided for.

The connections between the southerly end of Woburn Parkway and Wildwood Street will furnish connections with good

roads which lead to Mystic Valley Parkway on the easterly side of Mystic Lakes and to Cambridge Street on the westerly side of Mystic Lakes. So far as present necessities are concerned, it is perhaps unnecessary to go farther at the present time, but as the land for a parkway connection over the entire distance is now practically open, and this part of the town of Winchester is rapidly being built over, it would seem wiser to acquire at this time all the land necessary for a complete connection, and if the construction of the entire distance is not at present feasible, then construct as far as Wildwood Street, leaving construction of the rest of the distance for the future.

Having these facts and opportunities in mind, the Board recommends that the land for an extension of Woburn Parkway be acquired in such form as to extend to and control the shores of Winter Pond, and thence extend in two roadways, one easterly to connect with Woodside Road leading into the southerly branch of Wildwood Street, and the other westerly to connect with Wildwood Street opposite Wedgemere Avenue, and that the land be acquired for a future improvement of Wildwood Street and its extension by Central Street through Rangeley around the easterly side of the Ginn estate to a connection with the Mystic Valley Parkway, and that construction from the Woburn Parkway to Wildwood Street at the two points mentioned be also provided for at this time.

The plan accompanying this report indicates in general form the land which would be required and the public convenience which would be served by the acquirement and construction recommended.

The cost of the land is estimated to be not over $25,000, and the cost of construction from Woburn Parkway to the two points on Wildwood Street recommended is estimated to be not over $25,000, a total of $50,000. It is recommended that this amount be provided by an appropriation as an addition to the Metropolitan Parks Loan, Series Two, under chapter 278 of 1894. A bill to cover this amount is submitted with this report.

All of which is respectfully submitted.

WILLIAM B. DE LAS CASAS,
EDWIN U. CURTIS,
ELLERTON P. WHITNEY,
EVERETT C. BENTON,
CHARLES J. BARTON,
Metropolitan Park Commission.

JAN. 6, 1916.

APPENDIX.

AN ACT TO AUTHORIZE THE METROPOLITAN PARK COMMISSION TO ACQUIRE LAND FOR AND CONSTRUCT AN EXTENSION OF WOBURN PARKWAY TO WOODSIDE ROAD AND WILDWOOD STREET AND FOR THE IMPROVEMENT AND EXTENSION OF WILDWOOD STREET IN THE TOWN OF WINCHESTER.

Be it enacted, etc., as follows:

SECTION 1. The metropolitan park commission is hereby authorized to acquire land for and construct an extension of Woburn parkway to Woodside road and Wildwood street, and to acquire land for the further improvement of Wildwood street and for its extension to Central street, in the town of Winchester, and for that purpose to exercise the powers conferred upon it by chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four, and acts in addition thereto and in amendment thereof, and to expend for the purpose the sum of fifty thousand dollars as an addition to the metropolitan parks loan, series two.

SECTION 2. To meet expenditures made under authority of this act the treasurer and receiver-general, with the approval of the governor and council, shall issue scrip or certificates of indebtedness, bearing interest at a rate not exceeding four per cent per annum, to the amount of fifty thousand dollars as an addition to the Metropolitan Parks Loan, Series Two, and shall add to the existing sinking fund to provide for the payment of the same. Such scrip or certificates of indebtedness shall be issued and additions to said sinking fund shall be assessed and collected in accordance with the provisions of chapter four hundred and nineteen of the acts of the year eighteen hundred and ninety-nine, and acts in amendment thereof and in addition thereto.

SECTION 3. This act shall take effect upon its passage.

APPENDIX 3.

REPORT OF THE METROPOLITAN PARK COMMISSION UPON THE DESIRABILITY AND THE COST OF TAKING BOSTON ROCK, SO CALLED, IN THE CITY OF MELROSE, AND OTHER PROPERTY NEAR THE MIDDLESEX FELLS RESERVATION, AS A PART OF THE METROPOLITAN PARK SYSTEM.

To the Honorable Senate and House of Representatives.

The Metropolitan Park Commission, required by chapter 21 of the Resolves of the year 1915 to report upon the desirability and the cost of taking Boston Rock, so called, in the city of Melrose, and other property near the Middlesex Fells Reservation, as a part of the Metropolitan Park System, beg leave to report as follows: —

The resolve, chapter 21 of 1915, is as follows: —

CHAPTER 21.

RESOLVE TO PROVIDE FOR INVESTIGATING THE ADVISABILITY OF TAKING BOSTON ROCK AND OTHER PROPERTY NEAR THE MIDDLESEX FELLS RESERVATION FOR PARK PURPOSES.

Resolved, That the metropolitan park commission be directed to investigate and report upon the desirability and the cost of taking Boston Rock, so called, in the city of Melrose, and other property near the Middlesex Fells reservation as a part of the metropolitan park system, and report to the general court on or before the second Wednesday in January, nineteen hundred and sixteen. [*Approved March 12, 1915.*

Boston Rock is a high ridge in the southerly part of Melrose, which appears to be an outcrop of the rocks which form the easterly part of Middlesex Fells, but separated from the Fells by the intervening valley of Spot Pond Brook. This valley is flanked on the west by Washington Street, known in old days as the Stoneham Road, and on the east by Main Street, formerly the Reading Turnpike, in which electric car tracks form the main line from Boston and Chelsea through Everett and Malden to Melrose, Stoneham, Wakefield and Reading. The valley of

Spot Pond Brook is about 2,700 feet wide, with the tracks of the Boston & Maine Railroad, Western Division, running through it parallel to the brook. Between Boston Rock and Main Street is a field from which the rock rises abruptly. South of the rock on the opposite side of Sylvan Street is a park of approximately 81 acres, partly in Melrose and partly in Malden, known as Pine Banks Park. This park is one of great beauty and diversity of scenery, and has a glacial moraine and many acres of level field. It is developed by excellent roads and paths and the fields are laid out as play fields. This park was a gift from the late Elisha S. Converse to the cities of Malden and Melrose for so long a time as appropriations for its maintenance should be made by the cities. It has been maintained by these cities for many years, and appears likely to be maintained forever by them. It is a very popular resort and playground, not only for the people of Melrose and Malden, but for many coming from a distance by the railroad and electric cars.

Boston Rock stands near the playfield of Pine Banks Park. It is an impressive feature of the immediate landscape, and to those who climb it affords a fine view. It is in private ownership and its once fine tree growth has suffered from neglect and the attacks of insects, and is now rather unsightly. Recently an attempt was made by the owners to dispose of it as a quarry for broken stone products, but this is understood to have been prevented by the unwillingness of the city of Melrose to permit a quarry to be operated in this part of the city.

From these facts it is readily seen that Boston Rock is a striking feature in the landscape of the region in which it is situated, and that it has long been a place of resort which has made it in the public eye its property, but not being in fact public property, and being in some degree taxed by the city of Melrose, its owners are very naturally inclined to sell it for any purpose which will relieve them of taxes and other expenses of ownership, and that many of the public who delight in it as it has been now wish that it may be preserved from destruction or such uses as would make it unsightly.

There are many other beautiful spots in the Metropolitan Parks District which are in one way or another as notable and worthy of preservation as Boston Rock and its neighboring lands. Their preservation would be a public benefit which would outride the small value in taxes which they return to the community, and their preservation is a matter worthy of public

action. The requirement of the resolve under which this report is made requires that this Board should report as to the desirability and cost of taking Boston Rock and adjoining properties as a part of the Metropolitan Park System. The Metropolitan Park System was established as a convenient way of securing such larger features of natural scenery within the Metropolitan Parks District as have an extraordinary interest or usefulness for the people of the District. The acquirements made by this Board have in general been confined to these larger features of the District, and only such tracts of seashore, river bank and wild lands have been secured as possessed interest for the entire District. The lands secured have been largely such as were not only notable and a delight to those living near them, but beyond the power of a single municipality to secure because of the cost or because the desired area extended beyond the limits of a single municipality. Judged by this standard Boston Rock is not an object of metropolitan interest and solicitude; certainly it cannot compare in metropolitan interest with Blue Hills, Middlesex Fells, with Revere Beach or the banks of Charles River.

There have been cases, however, in which metropolitan aid has been given to local interest and has resulted in securing important areas of a notable or particularly useful sort, although little used by more than the people in the immediate neighborhood, and the fact that such aid is authorized by a special statute gives warrant to public feeling that judiciously exercised the extending of such aid is a proper form of metropolitan park expenditure. Boston Rock is not only a notable feature in the landscape and a gratifying and much used hilltop, but is more because of its relation to Pine Banks Park and because it is a gratifying feature to those looking across the valley from the easterly cliffs of Middlesex Fells and to the many thousands who daily pass within sight of it in the railroad trains and in the cars of the street railway. That its usefulness might be preserved as an adjunct to Pine Banks Park, and be an additional incentive to the cities of Melrose and Malden to continue to provide for Pine Banks Park, this Board would be inclined to recommend that aid be given to acquirement by the city of Melrose if there were before it any definite suggestion on the part of the city of Melrose that it is desirous of preserving Boston Rock and is prepared to recognize the local value of the rock beyond its metropolitan value by providing any substan-

tial part of its probable cost. There is no such suggestion, however, before the Board. Indeed the feeling of the city of Melrose would appear to be contrary to any such co-operation because in 1914, after the city government of Melrose had authorized an appropriation for the purpose of acquiring Boston Rock, it was submitted to the city on its annual election ballot sheet and failed of acceptance. This fact, taken in connection with the further fact that there is no way of making sure that the cities of Melrose and Malden will always continue to make an appropriation for the maintenance of Pine Banks Park, leads the Board to report that until these points are provided for by some action on the part of the cities of Melrose and Malden, it is not advisable that action should be taken to make Boston Rock a part of the Metropolitan Park System.

For purposes of reference in case of any further consideration of the matter by the Legislature, it may be stated that the amount authorized by the city of Melrose for the purchase of Boston Rock including some 12 acres of land and a right of way to Main Street and restrictions upon 21 acres more or less between the rock and Main Street, was $10,000. As near as can be estimated the cost of acquiring Boston Rock and the land out to Main Street would be not over $25,000.

All of which is respectfully submitted.

WILLIAM B. DE LAS CASAS,
EDWIN U. CURTIS,
ELLERTON P. WHITNEY,
EVERETT C. BENTON,
CHARLES J. BARTON,
Metropolitan Park Commission.

JAN. 12, 1916.

APPENDIX 4.

REPORT OF THE METROPOLITAN PARK COMMISSION ON THE DEVELOPMENT OF WEST ROXBURY PARKWAY BETWEEN THE ARNOLD ARBORETUM AND STONY BROOK RESERVATION.

To the Honorable Senate and House of Representatives.

The Metropolitan Park Commission, required by chapter 75 of the Resolves of the year 1915 to report as to the development of West Roxbury Parkway between the Arnold Arboretum and Stony Brook Reservation in the city of Boston, beg leave to report as follows.

The resolve, chapter 75 of the Resolves of 1915, under which this report is made, is as follows: —

CHAPTER 75, RESOLVES OF 1915.

RESOLVE DIRECTING THE METROPOLITAN PARK COMMISSION TO INVESTIGATE THE DEVELOPMENT OF THE WEST ROXBURY PARKWAY BETWEEN THE ARNOLD ARBORETUM AND STONY BROOK RESERVATION IN THE CITY OF BOSTON.

Resolved, That the metropolitan park commission is hereby authorized and directed to report to the next general court, on or before the first Monday in February, its recommendations for the proper development of the West Roxbury parkway between the Arnold arboretum and Stony Brook reservation in Boston, including the location of driveways therein and such other improvements as the commission may deem proper for the development of said land for a parkway connecting the Arnold arboretum with Stony Brook reservation. The report shall be in print and shall be accompanied by such plans as the commission may deem necessary. For the purposes of this resolve, the commission may expend a sum not exceeding five hundred dollars, to be paid out of the Metropolitan Parks Maintenance Fund. [*Approved April 28, 1915.*

As preliminary to the consideration of the requirements of this resolve, it is necessary that the following facts concerning West Roxbury Parkway be known.

The report of the secretary of the Metropolitan Park Commission, accompanying the report of the Board, to the Legislature of 1895 contained the following statement: —

It having been decided that the interests of the metropolitan community, especially of the city of Boston, would be best subserved by the connecting of the Stony Brook Reservation with the Boston park system, an agreement was entered into between this Commission and the Boston Park Commission whereby takings should be made at the same time by both Boards for a parkway extending from the Arnold Arboretum to the Stony Brook Reservation by the way of Bellevue Hill. In accordance with this agreement, this Commission on October 18 made two takings, including an area of 156 acres, of that portion of the parkway between Weld Street and Washington Street, being the Bellevue Hill section. This left the portion from Weld Street to the Arnold Arboretum, which was taken by the Boston Park Commission practically at the same time, thereby making the connecting link between the two park systems. It was further a part of this understanding that upon the taking by this Commission of the land the Boston Park Commission should assume the construction, care and maintenance of that portion taken by this Board for a term of nine hundred and ninety-nine years.

This transfer, made December 20, has been duly approved by the mayor and city council of Boston, as required by the statute; and it therefore becomes a part of the duty of the Park Commissioners of Boston to construct and maintain this connecting link.

In the interval since 1895 it is understood that the Boston Park Commission has built in temporary form a bridle path in the lands between the Arboretum and Weld Street, which it acquired by its own takings, has used a small part of the land which was transferred to it by this Board for a nursery, and has modified the original design of the landscape architect, according to which the takings were made by both Boards, by assenting to a layout of city streets following the general contour of the border roads at first suggested, but upon lines which would be partly within and partly without the takings, and has allowed partial construction of these border roads and the location of service pipes partly within and partly without the takings. This anomalous condition is indicated on the plan accompanying this report. The lands for West Roxbury Parkway, so far as acquired by this Board, were taken under the park act, chapter 407 of the year 1893, and are therefore a park and not a parkway. Their cost, $253,298.68, is a charge upon the Metropolitan Parks District alone. It is well understood that the reason for the acquirement being made was the desire of the city of Boston, expressed before the parkway acts were passed, that the takings should be made to supplement those of Stony Brook Reservation, for the purpose of extending the Boston park system toward a connection with the Blue Hills Reservation and toward lands

which it was then hoped would be acquired along Neponset River.

Since the takings of Stony Brook Reservation and West Roxbury Parkway were made, land has been acquired for the extension to Neponset River and to Blue Hills except where the tracks of the New York, New Haven & Hartford Railroad intervene; and Neponset River Parkway has been constructed between Paul's Bridge and Brush Hill Road in Milton. Land has also been acquired for a parkway most of the way from Stony Brook Reservation to Boyden Square in Dedham and partial construction completed.

As the city of Boston had done so little toward carrying out its intention to build West Roxbury Parkway, as manifested by the agreement and transfer of 1894, the Legislature of 1915, by chapter 270 of the acts of that year, retransferred to this Board the lands transferred by this Board to the city of Boston in 1894. The act under which this transfer was made is as follows: —

CHAPTER 270, GENERAL ACTS OF 1915.

AN ACT TO TRANSFER TO THE METROPOLITAN PARK COMMISSION THE CARE AND CONTROL OF THE WEST ROXBURY PARKWAY IN THE CITY OF BOSTON.

Be it enacted, etc., as follows:

SECTION 1. The care, control and custody of the land in the West Roxbury parkway, so-called, transferred by the metropolitan park commission to the city of Boston by an instrument dated December twentieth, eighteen hundred and ninety-four, is hereby re-transferred and vested in said metropolitan park commission with all the powers over the same conferred upon said board by chapter four hundred and seven of the acts of the year eighteen hundred and ninety-three and acts in amendment thereof and in addition thereto.

SECTION 2. This act shall take effect upon its passage. [*Approved May 22, 1915.*

From this preliminary statement it appears that the lands of West Roxbury Parkway, so called, which are now by the retransfer of 1915 in the care of this Board, are park lands, and that they extend from Stony Brook Reservation to Weld Street in that part of Boston known as West Roxbury, but do not extend as far as the Arnold Arboretum. The land between Weld Street and the Arnold Arboretum remains in the possession of the Park Commission of the city of Boston; the Arnold Arboretum belongs to the park system of the city of Boston, but

is held under an agreement with Harvard University providing for its development as an arboretum, and is enclosed by walls with gates which are open only during the daytime, and then only for the admission of those on foot or in carriages. As the matter now stands, it must therefore be recognized that while this Board is required to suggest a plan for the development of West Roxbury Parkway from the Arboretum to Stony Brook Reservation, yet the carrying out of such plan will require conformity and co-operative work by the city of Boston and its park department and street department.

When the land for West Roxbury Parkway was acquired in 1894, the surrounding lands of the West Roxbury section of Boston were held in large estates or farms, and the few highways, with the exception of Centre Street and Washington Street, followed an indirect course for the use of these farms. The purpose of laying out West Roxbury Parkway was to provide an extension of the Boston park roads to those of Stony Brook Reservation and others likely to be built as an approach to Blue Hills Reservation and to Dedham, and provide parkways and highways running across the general line of Centre Street and Washington Street. The plan for this parkway provided for border roads to be built as city streets upon which dwellings should face and for the parkway drive and path between these border roads and for a driveway up Bellevue Hill. Since that time a considerable real estate development has begun in these surrounding lands, and it is now evident that they will soon be built over. Many short streets have been constructed and a new layout of the border roads of the West Roxbury Parkway has been made by the city of Boston with a view to meeting these changed conditions, but none of them has been built, and no other through streets have been built, and the through highways are now, as in 1894, merely Centre Street and Washington Street. The West Roxbury section of Boston is, therefore, face to face with the actual need of immediate construction of so much of the driveway and the bordering city streets as will provide for through travel to the driveways of the Boston park system and to the main highways leading toward the center of Boston. The inconvenience arising from the delay of their construction apparently led to the unusual action of the Legislature of 1915 in overruling the agreement between this Board and the city of Boston in 1894, and in making the retransfer to this Board of the lands which it had transferred to the Boston Park Board for development in 1894, and of now requiring from

this Board this report and plan and suggestions in regard to West Roxbury Parkway.

Having these facts in mind a plan has been prepared and is submitted with this report. It differs from the plan of 1894 only in conforming to the change in layout of the border city streets provided for by the action of the city of Boston, subsequent to the original transfer of 1894, and by omitting paths and grading and other incidental work of importance which may be left for future work and expense. As thus prepared, the plan indicates a park driveway flanked by park lands of varying widths and by city streets with sidewalks on the side on which houses will face. The park driveway includes a bridge over the railroad tracks of the Dedham branch near the Bellevue station, as a means of reaching the driveway and the border streets following the broader outlines of the park lands as they approach, and include Bellevue Hill to Washington Street at Stony Brook Reservation. A driveway, as a branch of the main driveway, is indicated as a means of reaching the top of Bellevue Hill. Washington Street is a main highway from Dedham to Forest Hills. Centre Street is a main highway from Westwood and West Roxbury and crosses the West Roxbury Parkway lands near the Bellevue station, and again recrosses it near Weld Street, and continues northwesterly to a junction with Pond Street, which leads toward the Jamaica Plain section of Boston, crossing the Boston park roads. Other city streets besides Weld Street and Walter Street near the Arboretum all lead to Centre Street.

It is evident that the park driveway is intended to provide an extension of the excellent park driveways of the Boston park system to the Blue Hills and to Dedham, and thereby give parkway approach to the southwesterly part of the Metropolitan Parks District. There is no other parkway or park driveway leading to these parts of the district, although a project for a parkway, to be known as Hammond Pond Parkway, from West Roxbury Parkway near Weld Street through the Putterham Woods section of Brookline and the Hammond Pond section of Brookline and Newton, and other parks of Newton and Watertown to Charles River, has been in part realized by the acquirement of a considerable proportion of the lands necessary for its completeness. The bordering highways of West Roxbury Parkway are intended to provide city streets for houses facing the parkway and for the entrance to streets from the surrounding lands and between Washington Street and Centre Street. These highways are intended also to make any connections with Wash-

ington Street and Centre Street main highways through the West Roxbury section, which is inadequately provided with main highways leading to and from the center of the city. No estimate has been made of the cost of constructing the bordering city streets, as it is assumed that such streets would be built by the city of Boston as a means of developing the adjoining lands and providing through highways.

The cost of constructing the park driveways, including the bridge across the railroad at Bellevue station, is estimated to be as follows (exclusive of walks and paths and general improvement of the park land): —

For construction of the driveway without other development of the park land, the cost from the Arboretum to Weld Street would probably be	$45,000 00
From Weld Street to Centre Street, ...	16,000 00
From Centre Street to Anawan Street, including bridge ($30,000) over the railroad, ...	47,000 00
From Anawan Street to Washington Street at Stony Brook Reservation, ...	29,500 00
For driveway up Bellevue Hill, ...	15,000 00
Total, ...	$152,500 00

The length of the park driveway will be about two miles. In connection with the Boston parks and the metropolitan parkways, it will connect and make available a present 10 miles of parkway and an ultimate 4 miles more, and in addition give connection to the many miles of the driveways of the Boston parks and the metropolitan roads in Stony Brook and Blue Hills Reservations. The expense of construction of the entire parkway is obviously a very considerable one, and for that reason has been presented by sections so that the present improvement of the construction of each section may be considered separately.

All of which is respectfully submitted.

WILLIAM B. DE LAS CASAS,
EDWIN U. CURTIS,
ELLERTON P. WHITNEY,
EVERETT C. BENTON,
CHARLES J. BARTON,
Metropolitan Park Commission.

JAN. 26, 1916.

PROCEEDINGS BEFORE, AND DETERMINATION AND REPORT OF, APPORTIONMENT COMMISSIONERS APPOINTED UNDER THE ACTS OF 1899, CHAPTER 419, AND ACTS IN AMENDMENT THEREOF AND IN ADDITION THERETO, TO DETERMINE THE PAYMENTS TO BE MADE ANNUALLY BY CITIES AND TOWNS DURING THE FIVE YEARS BEGINNING JAN. 1, 1915.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. SUPREME JUDICIAL COURT. IN EQUITY.

In the matter of the petition of William B. de las Casas *et al.*, Metropolitan Park Commissioners, for appointment of commissioners to determine payments by cities and towns under Acts of 1899, chapter 419.

PETITION.

Respectfully represents William B. de las Casas, of Malden, in the County of Middlesex, Edwin U. Curtis, of Boston, in the County of Suffolk, Ellerton P. Whitney, of Milton, in the County of Norfolk, Everett C. Benton, of Belmont, in said County of Middlesex, and Charles J. Barton, of Melrose, in said County of Middlesex, your petitioners: —

That they constitute the Board of Metropolitan Park Commissioners duly established under and by virtue of an Act of the Legislature of Massachusetts, entitled "An Act to Establish a Metropolitan Park Commission," being chapter 407 of the Acts passed in the year A.D. 1893, and acting under said act and acts in amendment thereof and in addition thereto.

That in and by section 1 of chapter 419 of the Acts of the Legislature of the year 1899 (a copy of which, together with a copy of section 2 of said last-mentioned act, is hereto annexed, marked "Exhibit A") it is provided that, in order to determine the proportionate sums annually to be paid into the treasury of the Commonwealth by the various cities and towns within the Metropolitan Parks District, beginning with the first day of January in the year 1915 and continuing until the first day of January in the year in which a new award is made, as therein

provided; to meet the interest and sinking fund requirements therein provided for, and to provide the amount required to meet the expenses of said Board, and of the care, maintenance and operation of the parks, reservations, boulevards and other works acquired, cared for and controlled by said Board, as therein provided, — there shall be three commissioners appointed for that purpose by this honorable court, on petition of this Board.

That for the purpose of carrying out the provisions of said acts it is necessary and expedient that said commissioners be appointed by the court as aforesaid..

They therefore pray that after such notice as this honorable court shall order, if any, there may be three commissioners appointed in the manner and for the purposes, and with all the rights, powers, privileges, duties and obligations in said act of 1899 mentioned or referred to.

And for greater certainty in all matters and things connected with this petition and the subject-matter thereof, your petitioners crave leave to refer to the Acts of 1893, chapter 407, and all acts in amendment thereof and in addition thereto.

WILLIAM B. DE LAS CASAS,
EDWIN U. CURTIS,
ELLERTON P. WHITNEY,
EVERETT C. BENTON,
CHARLES J. BARTON,
Metropolitan Park Commissioners.

BY HENRY C. ATTWILL,
Attorney-General.

EXHIBIT A.

[ST. 1899, CHAPTER 419, SECTIONS 1, 2.]

SECTION 1. In the year nineteen hundred and in every fifth year thereafter the supreme judicial court in equity, on application of the metropolitan park commission or of the attorney-general, or of any city or town of the metropolitan parks district by its attorney, and after such notice as the said court may order to each city and town of that district, shall appoint three commissioners, neither of whom shall be a resident of any city or town in said district, who shall, after such notice and hearing as they deem sufficient and in such manner as they deem just and equitable, determine and make award of the proportions in which each of the cities and towns of said district shall annually pay money into the treasury of the Commonwealth, beginning with the first day of January of the year in which such commissioners are required to be appointed, until the first day of January of the year in which a new award is made hereunder, to provide the amount for that year as estimated by the treasurer of the Commonwealth to meet the interest and sinking fund requirements of the appropriations and loans authorized by chapter four hundred and seven of the acts of the year eighteen hundred and ninety-three, chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four, chapter three hundred and five of the acts of the year eighteen hundred and ninety-five, and all acts in addition thereto and in amendment thereof, and the amount required to meet the expenses for that year of said board of metropolitan park commissioners, and of the care, maintenance and operation for that year of the parks, reservations, boulevards and other works acquired, cared for or controlled by said board under said acts, as annually authorized by the general court, and the deficiency, if any, in the estimates and payments for the preceding year as found by said treasurer, and shall return their award thus determined into said court: *provided, however*, that the commissioners shall fix and return the proportion to be paid by the city of Boston for each year of the first of said terms at fifty per cent. Every such award when accepted by said court shall be final and conclusive adjudication for the term for which it is made, of all matters referred to the commissioners and shall be binding upon all parties.

SECTION 2. The treasurer shall in the year nineteen hundred and in each year thereafter, estimate the several amounts required for that year from each city and town of said district, in accordance with said award, to provide the entire amount needed to meet the interest and sinking fund requirements of the appropriations and loans authorized by said chapter four hundred and seven of the acts of the year eighteen hundred and ninety-three, and acts in addition thereto and in amendment thereof, and to meet the expense for that year of said metropolitan park commission incurred under said acts, and of the care, maintenance and

operation of the parks, reservations and works acquired, cared for and controlled by said board under said acts, and the deficiency in the estimates and payments for these purposes for the previous year; and the treasurer shall also, in the same manner, estimate the several amounts required for that year from each city and town of said district to provide one-half of the entire amount needed to meet the interest and sinking fund requirements of the appropriations and loans authorized by chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four, and acts in addition thereto and in amendment thereof, and one-half of the expense for that year of said metropolitan park commission under said acts, and of the care, maintenance and operation of the roads, boulevards and other works acquired, cared for and controlled by said board under said acts, and one-half of the deficiency in the estimates and payments under said acts for these purposes for the preceding year, and shall include the several amounts thus estimated to be needed each year from each city and town of said district in the sum to be paid by each as its state tax for that year, and shall charge the remaining one-half of the entire amount required for that year for interest, sinking fund requirements and for expenses and deficiency, as aforesaid, under said chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four to the Commonwealth, and shall include the same in the annual state tax for that year; and the amounts thus required in each year of the several cities and towns of said district and of the Commonwealth shall be paid by each into the treasury of the Commonwealth at the time required for the payment and as a part of the state tax of each for that year.

Notice.

COMMONWEALTH OF MASSACHUSETTS.

Suffolk, ss. Supreme Judicial Court.

In the matter of the petition of William B. de las Casas *et al.*, Metropolitan Park Commissioners, for appointment of commissioners to determine payments by cities and towns under Acts of 1899, chapter 419.

On the foregoing petition it is ordered that the petitioners give notice to the cities of Boston, Cambridge, Chelsea, Everett, Lynn, Malden, Medford, Melrose, Newton, Quincy, Revere, Somerville, Waltham and Woburn, and the towns of Arlington, Belmont, Braintree, Brookline, Canton, Cohasset, Dedham, Dover, Hingham, Hull, Milton, Nahant, Needham, Saugus, Stoneham, Swampscott, Wakefield, Watertown, Wellesley, Weston, Westwood, Weymouth, Winchester, and Winthrop to appear before the justices of this court, to be holden at Boston within and for said County of Suffolk, on Tuesday, the second

day of March, next, at 9½ o'clock, in the forenoon, by forthwith mailing, by registered letter to each of them, an attested copy of said petition and of this order, that they may then and there appear and show cause why the prayer of said petition should not be granted.

By the Court,

JOHN H. FLYNN,
Assistant Clerk.

JAN. 28, 1915.

A true copy. Attest:
[SEAL]
JOHN H. FLYNN,
Assistant Clerk.

COMMONWEALTH OF MASSACHUSETTS.

SUFFOLK, ss. SUPREME JUDICIAL COURT. IN EQUITY.

In the matter of the petition of William B. de las Casas *et al.*, Metropolitan Park Commissioners, for the appointment of commissioners to determine payments by cities and towns under Acts of 1899, chapter 419.

DECREE.

And now, upon the above-entitled petition, it appearing to the court that due notice thereof was given to all cities and towns, respondents, according to the order of the court, and after due hearing thereof, it is ordered that Robert O. Harris of Bridgewater, George S. Taft of Worcester, and James H. P. Dyer of Leominster be and they are hereby appointed commissioners under section 1 of chapter 419 of the Acts of the year 1899, to determine and make award of the proportions in which each of the cities and towns of said district shall annually pay money into the treasury of the Commonwealth, beginning with the first day of January in the year 1915, until the first day of January of the year in which a new award is made as provided for by said act; to provide the amount for each of said years as estimated by the Treasurer of the Commonwealth to meet the interest and sinking fund requirements therein provided for; and to provide the amount required to meet the expenses of said Board of Metropolitan Park Commissioners, and of the care, maintenance and operation of the parks, reservations, boulevards and other works acquired, cared for and

controlled by said Board, as therein provided, and the deficiency, if any, in the estimates and payments for the preceding year as found by said Treasurer; and to do and perform all the other duties prescribed for them by said act and by chapter 464 of the Acts of 1899, entitled "An Act to Authorize the Metropolitan Park Commission to take, control and manage Nantasket Beach and Adjacent Lands and Waters," and by chapter 465 of the Acts of 1903, entitled "An Act to authorize the Construction of a Dam across the Charles River between the Cities of Boston and Cambridge," as amended by chapter 402 of the Acts of 1906, entitled "An Act relative to the Charles River Basin," and by chapter 794 of the Acts of 1914, entitled "An Act to authorize the Metropolitan Park Commission to reconstruct Wellington Bridge over the Mystic River between Somerville and Medford," and by all other acts of the Legislature imposing powers and duties upon said commissioners, and to exercise all the powers thereby and by law imposed upon said commissioners by any and all acts of the Legislature.

By the Court,

JOHN H. FLYNN,
Assistant Clerk

MAR. 3, 1915.

A true copy. Attest:

[SEAL]

JOHN H. FLYNN,
Assistant Clerk.

The commissioners appointed under the foregoing decree were duly sworn, and gave due notice to the cities and towns constituting the Metropolitan Parks District when and where they would meet to take evidence, according to the return filed herewith. They met pursuant to said notice, and most of the cities and towns constituting said district appeared by counsel, and all cities and towns were heard which desired to be heard.

The commissioners viewed all the metropolitan parks and boulevards included within the district, as well as Nantasket Beach and Charles River dam and basin, and such local parks and reservations as the different municipalities desired them to see.

The commissioners heard the arguments presented by the different municipalities and considered the many able briefs filed by them. The Commission had prepared for it the statistics of the district showing the population and valuation of each city and town. The Commission has also had many tables prepared based upon these statistics.

REPORT OF APPORTIONMENT COMMISSIONERS.

The Metropolitan Park Commission was established by the Acts of 1893, chapter 507.

The Board of Metropolitan Park Commissioners was authorized: "To acquire, maintain and make available to the inhabitants of said district open spaces for exercise and recreation."

The amount to be expended under that act was not to exceed $1,000,000.

By Acts of 1894, chapter 288, the Board of Metropolitan Park Commissioners was authorized to construct roadways and boulevards: "To connect any road, parkway, or other public open space, with any part of the cities and towns of the Metropolitan Parks district under its jurisdiction, by suitable roadway or boulevard."

By Acts of 1894, chapter 483, Revere Beach Reservation was added.

By Acts of 1899, chapter 464, the Nantasket Reservation was added.

From an original authorized expenditure of $1,000,000 for parks and their maintenance alone, the amount for park and boulevard loans and Charles River Basin now represents a total investment approaching $20,000,000, and an annual expense for sinking fund, interest, serial bonds and maintenance requirements of approximately $1,500,000. As the investment grows the maintenance expense also grows, and the problem of just apportionment becomes more serious because of the large amounts involved.

Former commissions have considered nearly all of the propositions that have been presented to us, and no two of them have adopted the same plan. No former Commission has had to consider the condition that exists to-day. Originally the plan was to furnish open places in different parts of the District and connect them with good roads. In the last ten and particularly within the last five years, the automobile has changed the character of the District and the manner of its use. Parkways

and boulevards have made the whole district an open space and have become of as great if not greater importance than the reservations.

The great and increasing use of the automobile has necessitated new, improved and more costly standards of road building, to withstand its road-destroying characteristics, and a great additional expense for maintenance.

The State Highway Commission has had to build and maintain, and is building and maintaining, expensive roads throughout the State; the Metropolitan Park Commission is building its boulevards and parkways to an equal or higher standard both of excellence and cost; and cities and towns whose streets are connecting links have been compelled to follow this lead.

This Commission had some statistics gathered that indicate the extent of the use of the automobile. A count of automobiles passing over Wellington Bridge for four days in August, 1915, gave 18,502 in number. Of these, 2,344 came from sixteen other States and provinces. Another count was made on seven other days in August, taken only during certain hours in each day. On those days 1,971 automobiles were counted from thirty-nine other States. Automobiles were counted from Oregon, California, Texas, North and South Carolina, Florida, New Mexico, as well as from the great interior States. Nearly every city and town in the Commonwealth furnished its quota to the total number.

The increase in the use of the automobile is indicated by the registration statistics in this State. In 1905 there were registered 4,889; in 1910, 31,360; and on Sept. 1, 1915, there were registered 93,158. Adding to this number the thousands owned outside the State, but which use our highways and metropolitan parkways and boulevards, it becomes evident that conditions now exist that had not existed at the time of any previous apportionment.

This new means of travel and transportation has imposed upon the municipalities increased burdens of local expenditure for more costly roads, their increased cost of maintenance, and for extra and special police forces to regulate and control this traffic. Neither parks nor boulevards are to-day merely of district concern.

Another thing that has made changes in the character and extent of the use of the reservations and boulevards within the district is the electric street railway. Since the creation of the

Metropolitan Park District in 1893 the development of travel by this means has become very marked. Not only have the street railways existing at that time been improved in character of their roadbed and cars, but the speed has been greatly increased, and the extension of old roads and the building of new ones through all parts of the District have made all the reservations more available to all the people of the District than was probably foreseen or contemplated in 1893.

The electric street car and the automobile seem to meet the needs of different portions of the population. The boulevards themselves have largely become restricted roads, over which the heavy commercial traffic is not allowed to go, leaving them for the use of those who travel by automobile or by lighter pleasure vehicles.

The street railway car does not use the boulevard. Those who travel by this sort of vehicle have, however, at their command extensive means of quick transportation at small cost. The 5-cent fare for considerable distances by street car, and the more luxurious automobile, using the parkways and boulevards, have furnished opportunities for extensive movement by all classes of people.

That the Metropolitan District as a whole has received benefit from the reserving of open spaces and the construction of fine roads cannot be questioned. The whole area has become more attractive to live in, more available to do business in, and property values have increased. This general benefit, however, is one that is vague, intangible and not to be directly placed, located or calculated. Local parks and playgrounds, under the new conditions, no longer meet the full needs of the population. The easy possibilities of long-distance travel have removed old limitations upon the movement of the population and have made all the parks more available for use by all the people.

Composition of the District.

The District includes the parks, Nantasket and Revere Beach reservations, Charles River Basin, and the parkways and boulevards.

The act of 1893, providing for the appointment of commissioners to make apportionment of the expense, imposed no rule upon, and gave no direction to, them except that they should apportion in such manner "as they deem just and equitable." This language has been considered by the able commissions who

have preceded this one, and has been by all deemed broad enough to allow deviations from the usual methods of assessment according to valuation.

The Commission of 1900 makes this comment upon the law: —

It is true that public burdens heretofore existing have been borne by property valuation, under very numerous laws. The creation of the Metropolitan Park District made a new and peculiar entity. Its outlay was to be enormous, but none of such assessment laws were made applicable to it. No way exists to meet this outlay except by the judgment of commissioners. The Legislature has prescribed no guide for their judgment except that it be "just and equitable," even going so far as to enact that it shall be "*as they deem*" just and equitable. This is a striking departure from previous methods of Massachusetts assessment and taxation. The commissioners' results, to be operative, must meet the approval of the court, — a safeguard against error in law, at any rate, and against any neglect of constitutional rights when such rights apply to towns and cities. This remarkable deviation from modes heretofore in use for raising funds for public purposes, seemed to require us to examine widely, not only in regard to one public requirement, but also into the circumstances and situations to which this new demand has been appended.

That Commission made its apportionment upon a valuation basis, but introduced the theory of abatements. It divided the cities and towns into three classes, according to their per capita valuation. It then abated to the class having the lowest per capita valuation a portion of their ratable share and transferred it to the class having the greatest per capita valuation. This method was approved by the court as within the language of the act.

The Commission of 1905 adopted the valuation theory, but deviated from its strict application by assessing upon some towns which had metropolitan boulevards within their territory a certain percentage for betterment because of that fact.

The Commission of 1910 adopted a plan with valuation as a basis, but exempting certain towns, called "fringe towns," from a portion of their share, and assessing that portion upon the remaining towns by valuation, and then apportioning 15 per cent. of the whole expense of parks according to population, exempting, again, from that portion of the assessment the so-called fringe towns. This was a combination of valuation, population and exemption.

No single method has met with full and complete approval and adoption. Valuation, population, abatement, exemption and special benefits have all entered into the different apportionments. All of the methods have been confirmed by the Supreme Judicial Court, and no one of these methods adopted in whole or in part has been criticized by the court or held unconstitutional or invalid.

The same arguments for each method have apparently been urged upon all previous commissions. Some municipalities have always striven for straight valuation plan; some for a combination of valuation and population; and some for further exemptions or abatements for special reasons of their own.

The method that has been most persistent and most strenuously urged before all commissions has been that of apportionment to some extent according to population. As is entirely natural, municipalities having a low population and high valuation percentages plead for apportionment by population; while those having high population and low valuation percentages plead for valuation. Certain towns which have been heretofore referred to as fringe towns have asked to be exempted from a considerable portion of their share, no matter which general plan was adopted.

Conditions are such at this time that we see no reason for making either abatements or exemptions or assessing special benefits; and we come finally to the consideration of the question as to whether the apportionment should be made upon the ordinary plan of valuation according to property, or apportionment by a combination of valuation and population.

The Commission of 1895 in its report (report of Metropolitan Park Commission, 1896, page 100) said as follows: —

> The ordinary manner of distributing the burden of taxation is upon the basis of valuation; but it is evident that the Legislature did not deem such a method proper in this instance, otherwise they would have adopted it.
>
> The reservations were acquired, and are to be maintained and made available to the inhabitants of the several cities and towns in the district as open places for exercise and recreation, and the expenses of such acquisition and maintenance might readily have been apportioned by statute on the basis of population.

It finally made its apportionment upon the basis of a combination of valuation and population. Ascertaining the per-

centage which each of the municipalities bore to the total valuation of the District, then ascertaining the percentage which the population of each municipality bore to the total population, they added those percentages together and divided them by two, thus obtaining the average per cent. Then they proceeded to vary the amount that particular municipalities would have to pay upon that per cent. by consideration of questions of special benefit, adding to some towns something for special benefit, and thereby reducing the amounts of others ratably.

The Commission of 1905, in discussing the argument that population should enter into their apportionment, said (report of Metropolitan Park Commission, 1906, page 108): —

> It has been strenuously urged that population should be adopted as the rule of apportionment of expense of park maintenance, on the ground that maintenance is based on use, and use on population, and that those who use should pay for this luxury of parks. From the viewpoint of civic foresight and administrative wisdom, parks are quite as necessary as the more obviously imperative needs for municipal expenditure. Use of parks is probably not directly proportionate to population. The opportunity of a given population for leisure is quite as important upon this issue as the number of people within its specific area. A substantial part of the maintenance expenditure is for purposes not directly dependent upon the use of the parks, but for their permanent development and preservation. Therefore, the argument does not seem to the commissioners of sufficient weight to cause the abandonment of the valuation basis, which has all the grounds of support, when viewed with reference to this item of expense, that it possesses as a general rule.

Although that Commission thus rejected population as an element in its apportionment, it seems to have done so not because it deemed an apportionment which should include population as unconstitutional, or as unjust, or inequitable, but because it found no satisfactory way of measuring the use by the population of the different municipalities with enough certainty to enable it to reduce it to figures.

The demand for the creation of the Metropolitan Parks District arose because the population in that area was increasing rapidly. Serious congestion was threatened, and the opportunity to secure large tracts for preservation was growing less each year.

The population to be provided for was that which tended most to create congested conditions, and which was least able to provide for its own out-of-door life, health and recreation. While

use of the parks was, of course, to be free to all, it was expected that that use would probably be greatest by those whose circumstances prohibited extended travel and the enjoyment of distant places. Such a use is incapable of being measured with accuracy. It may or may not be directly proportional to the population of particular cities or towns. We are inclined to believe that it is nearer to population than it is to valuation percentages, and that high population percentages do furnish some indication of need if not of use. By letting population enter as a factor into the problem of apportionment, and allowing its burdens to fall in part as they do in single municipalities, no injustice is done and no real departure is made from ordinary procedure.

The parks stand on a different basis from boulevards and parkways. They were created for a different use. The boulevards and parkways are public highways, and the cost of construction and maintenance may well follow the customary practice in regard to the expense of highways.

Nantasket Beach. — This Reservation stands by itself, and for the purpose of apportionment is in a different district because of the inclusion of Cohasset. As a result of our views and inquiries into its use, it appeared that the population resorting to it came as largely from outside as from inside the District, and that it was more of a State than a mere district reservation. We apportion the cost and expense of maintenance of this Reservation according to valuation.

Charles River Basin. — The Apportionment Commission of 1910 has already determined what portions of the construction costs were specifically to be assessed upon the cities of Boston and Cambridge under the provisions of section 9, chapter 465 of the Acts of 1903, as amended by section 2, chapter 402 of the Acts of 1906, and we regard that matter as settled. All the remainder of the construction and all the maintenance expense we apportion among the several municipalities according to valuation.

We deem it just and equitable to make, and therefore do make, apportionment as follows: —

Park maintenance, excluding Nantasket, is apportioned according to the average percentage of valuation and population.

As by law one-half the expense of boulevards is paid by the State and one-half by the Metropolitan Parks District, one-half of the cost of construction and maintenance of boulevards, and all

other expenses, both of construction and maintenance, except maintenance of parks as above stated, are apportioned according to valuation.

The cost of construction and maintenance of Nantasket Beach is apportioned according to valuation.

The percentages are shown in the following tables: —

TABLE A. — *Nantasket Beach Reservation.*

City or Town.	Per Cent., including Cohasset.	City or Town.	Per Cent., including Cohasset.
1. Boston,	.60533	21. Dedham,	.00561
2. Cambridge,	.04603	22. Dover,	.00265
3. Chelsea,	.01063	23. Hingham,	.00338
4. Everett,	.01161	24. Hull,	.00294
5. Lynn,	.03226	25. Milton,	.01314
6. Malden,	.01644	26. Nahant,	.00547
7. Medford,	.01067	27. Needham,	.00311
8. Melrose,	.00710	28. Saugus,	.00238
9. Newton,	.03237	29. Stoneham,	.00198
10. Quincy,	.01320	30. Swampscott,	.00635
11. Revere,	.00739	31. Wakefield,	.00417
12. Somerville,	.02640	32. Watertown,	.00728
13. Waltham,	.01180	33. Wellesley,	.00720
14. Woburn,	.00463	34. Weston,	.00412
15. Arlington,	.00644	35. Westwood,	.00170
16. Belmont,	.00382	36. Weymouth,	.00385
17. Braintree,	.00306	37. Winchester,	.00639
18. Brookline,	.05610	38. Winthrop,	.00622
19. Canton,	.00240	Total,	1.00000
20. Cohasset,	.00438		

TABLE B. — *Maintenance of Parks.*

CITY OR TOWN.	Per Cent.	CITY OR TOWN.	Per Cent.
1. Boston,	.54006	21. Dedham,	.00631
2. Cambridge,	.05758	22. Dover,	.00164
3. Chelsea,	.01910	23. Hingham,	.00336
4. Everett,	.01778	24. Hull,	.00220
5. Lynn,	.04654	25. Milton,	.00933
6. Malden,	.02375	26. Nahant,	.00319
7. Medford,	.01502	27. Needham,	.00363
8. Melrose,	.00892	28. Saugus,	.00443
9. Newton,	.02991	29. Stoneham,	.00337
10. Quincy,	.01951	30. Swampscott,	.00551
11. Revere,	.01168	31. Wakefield,	.00615
12. Somerville,	.04077	32. Watertown,	.00889
13. Waltham,	.01548	33. Wellesley,	.00565
14. Woburn,	.00752	34. Weston,	.00281
15. Arlington,	.00795	35. Westwood,	.00131
16. Belmont,	.00448	36. Weymouth,	.00636
17. Braintree,	.00449	37. Winchester,	.00638
18. Brookline,	.03878	38. Winthrop,	.00716
19. Canton,	.00298	Total,	1.00000
20. Cohasset,	–		

TABLE C. — *All Other Maintenance and Construction Expenses.*

CITY OR TOWN.	Per Cent., excluding Cohasset.	CITY OR TOWN.	Per Cent., excluding Cohasset.
1. Boston,	.60799	21. Dedham,	.00563
2. Cambridge,	.04623	22. Dover,	.00266
3. Chelsea,	.01068	23. Hingham,	.00340
4. Everett,	.01166	24. Hull,	.00295
5. Lynn,	.03240	25. Milton,	.01330
6. Malden,	.01652	26. Nahant,	.00549
7. Medford,	.01071	27. Needham,	.00312
8. Melrose,	.00714	28. Saugus,	.00239
9. Newton,	.03251	29. Stoneham,	.00199
10. Quincy,	.01326	30. Swampscott,	.00638
11. Revere,	.00742	31. Wakefield,	.00419
12. Somerville,	.02652	32. Watertown,	.00731
13. Waltham,	.01185	33. Wellesley,	.00723
14. Woburn,	.00465	34. Weston,	.00414
15. Arlington,	.00647	35. Westwood,	.00170
16. Belmont,	.00384	36. Weymouth,	.00387
17. Braintree,	.00307	37. Winchester,	.00642
18. Brookline,	.05635	38. Winthrop,	.00625
19. Canton,	.00241	Total,	1.00000
20. Cohasset,	–		

Although not a necessary part of this report, and possibly an improper addition, we still venture the suggestion that by reason of the changed conditions and the immense use that is being made of the Metropolitan District by those who do not live within it, and the burden of expense that their added use throws upon the District, it may in the future be deemed just either to extend the district limits or to have the Commonwealth assume part of the burden. Nantasket Beach, although made a part of the District, is not physically connected with it. It was acquired with the beneficent purpose of saving it for the use of all the people. The towns between Boston and Hull and the towns south of the Metropolitan District have become mere avenues of approach to it, and have to maintain roads suitable for the modern system of travel, — the automobile. As a result of our views and examination of that Reservation and the character of

its use, it seems fairly to have passed beyond the stage of a merely district playground or resort, and to have become a thing of at least State-wide interest. If taken over by the State, it would relieve the District to some extent, and for justifiable reasons.

The following requests for rulings were made: —

Town of Belmont. — Requests for Rulings and Findings.

This respondent requests the Apportionment Commissioners to rule and find: —

1. That the costs and expenses for care, maintenance and operation of the Metropolitan Parks and Reservations for the next five years shall be paid by each of the municipalities of the District on the basis of its valuation of real and personal property alone.

2. That each municipality shall pay 12½ per cent. of the cost, and expenses for the care, maintenance and operation, of Metropolitan boulevards actually constructed within its borders, and that the remaining 31½ per cent. thereof shall be paid by the entire Metropolitan District upon the valuation basis as above.

3. That this respondent be not assessed anything other than its proportionate part of the cost upon the whole District for any proposed boulevard within the town unless and until the same is actually constructed, and that no such boulevard has been constructed when this petition was filed nor at the present time.

4. That an apportionment based on population would be unjust and inequitable, and that it is impossible, impracticable and undesirable to use this method alone or in any combination with other methods.

5. That the location and maintenance of the Beaver Brook Reservation partly within the town of Belmont confers no benefit whatever upon the town, but that, on the contrary, it is a positive detriment and an expensive source of annoyance and trouble.

6. That the inhabitants of Belmont did not, and do not, need the Beaver Brook Reservation for their use, nor any of the parks or reservations.

7. That this respondent has adequate and satisfactory parks and playgrounds with an ample amount of open country for a long period of time.

8. That the inhabitants of Belmont make practically no use of the Beaver Brook Reservation, and very slight, if any, use of the other parks and reservations.

9. That the location of Belmont and its facilities for travel are such that the parks and reservations are not available for use by its residents.

10. That the distance to the reservations and return in most cases is

prohibitive, and when not prohibitive there are no facilities for reaching them except by private conveyance.

11. That the cities of Boston, Cambridge, Chelsea and Somerville need these parks, and especially Boston, and that they have their use and benefit much more than all the rest of the District together.

12. That if the local conditions are to be considered, then this respondent should be relieved of any assessment whatever, or at any rate its present assessment should be materially reduced.

13. That if the commissioners base the apportionment upon population wholly or partly, then the population of this respondent as determined by the census of 1910 must govern.

14. That Boston be ordered to pay the entire cost of the Boston Marginal Conduit, Embankment and Park thereon.

15. That Cambridge be ordered to pay the entire cost of the Cambridge Marginal Conduit.

16. That Cambridge be ordered to pay the cost of Broad Canal.

17. That Cambridge be ordered to pay the cost of Lechmere Canal.

18. That Cambridge be ordered to pay the cost of dredging at the entrance to said canals, and piling in the basin on its side.

19. That the cost of elimination of malarial mosquitoes be assessed on Boston, Cambridge, Newton and Watertown jointly or to any of them.

20. That the cost of dredging the channel at Watertown be assessed to Newton and Watertown either jointly or to either of them.

21. That the remaining balance of the cost of construction as outlined by the statutes be assessed not less than one-half to Boston, Cambridge, Newton and Watertown jointly or severally, and the rest on the whole Metropolitan Parks District on the basis of the valuation.

22. That the inhabitants of Belmont do not need and do not use the Basin as a park or otherwise.

23. That the inhabitants of Belmont have ample facilities right at hand for fresh-water sports.

24. That Boston and Cambridge be assessed on account of maintenance what it would have cost them annually to maintain a "suitable bridge" and draw.

25. That Cambridge be assessed on account of maintenance the cost of keeping the canals and channels leading to them clear of ice and obstructions.

26. That Boston be assessed on account of maintenance the cost of keeping the Boston Marginal Conduit, Embankment and Park.

27. That the town of Belmont is a fringe town, and if any of the outlying towns are entitled to more favorable consideration for that fact Belmont should be included among them.

Refused.

Town of Weston. — Requests for Rulings.

1. That this Commission must determine the cost of the construction of the Marginal Conduit on the south side of the Basin.

2. That this Commission must determine, as they shall deem just and equitable, what portion of the cost of the construction of the Marginal Conduit on the south side of the Basin shall be apportioned to the city of Boston.

3. That this Commission must determine, as they shall deem just and equitable, what portion of the cost of construction of the Marginal Conduit on the north side of the Basin shall be apportioned to the city of Cambridge.

4. That this Commission must determine the cost of dredging navigable channels in the Charles River Basin.

5. That this Commission must determine the cost of dredging the Broad Canal.

6. That this Commission must determine the cost of dredging Lechmere Canal.

7. That this Commission must determine the cost of strengthening canal walls by driving piles where dredging has been done.

8. That this Commission must determine the cost of removing and relocating of pipes or conduits made necessary by dredging.

9. That this Commission must determine the cost of dredging in the Basin outside of the navigable channels, and of all other dredging which has been done by the Charles River Basin Commission or by the Metropolitan Park Commission.

10. That this Commission must determine the cost of all measures taken either by the Charles River Basin Commission or by the Metropolitan Park Commission for the destruction of malarial mosquitoes in the Basin and its vicinity.

11. That this Commission must apportion the expense of maintaining the various works done and constructed under sections 3, 4, 5, 6, 7, 11 and 12 of chapter 465 of the Acts of 1903, as amended by the Acts of 1906, chapter 402.

THE TOWN OF WESTON,
By its counsel,
SAMUEL C. BENNETT.

All the requests, except the eleventh, were refused on the ground that all the matters embodied in the requests were determined by the last Apportionment Commission.

The eleventh request was granted.

Wellington Bridge Apportionment.

The commissioners appointed a time and place for hearing all parties interested in the matters submitted to their determination, and gave due notice thereof. The notice, with return of service, is filed herewith. Hearings were held in accordance with said notice on Aug. 3, 1915, and on numerous other days.

A large number of cities and towns appeared at the hearings, and some of them presented evidence, briefs and arguments; and all who desired to be heard were fully heard.

The commissioners also viewed the bridge and the surrounding territory.

In 1870 the county commissioners of Middlesex County laid out and constructed a road and a bridge and draw (known as the Middlesex Avenue Bridge) across the Mystic River between the (then) towns of Medford and Somerville.

The act of the Legislature under which it was constructed provided that said county commissioners should "determine and award what cities and towns in said county receive particular and special benefit from the construction and maintenance of such road and bridge," and should "apportion and assess upon said county and such cities and towns, and in such manner and amount as they shall deem equitable and just, the cost of construction and maintenance of such road, bridge and draw." (Acts of 1869, chapter 187.)

The apportionment was as follows: —

Somerville,	$16,000 00
Medford,	24,000 00
Malden,	18,000 00
Stoneham,	6,000 00
County of Middlesex,	60,232 63
Total cost of bridge and roads,	$124,232 63

The percentages paid were approximately as follows: —

	Per Cent.
Somerville,	12.90
Medford,	19.35
Malden,	14.51
Stoneham,	4.84
County of Middlesex,	48.40
	100.00

Somerville, Medford and Malden were to forever maintain and keep in repair the several parts of the road within their respective limits, and Somerville and Medford were to forever maintain and keep in repair the bridge and the draw in the bridge equally.

In 1903 the Metropolitan Park Commission removed Middlesex Avenue Bridge and constructed Wellington Bridge, so called, at substantially the same site, at an expense of $184,261.61. It was to be "constructed and maintained for the joint use of the highways of said cities (Somerville and Medford) and the Metropolitan reservations, roads and boulevards along and near said river in said cities" and to be maintained and operated by said Commission "for any purpose for which either the said highways or the said park roads may be used." The cost was to be paid "in part by such cities and towns in the county of Middlesex as shall be found to be specially benefited by the use of said bridge for highway purposes, and in part by the metropolitan parks district, to such extent as said district shall be found to be benefited by the use of the bridge for park purposes, and in the proportion to be determined by a special commission appointed as hereinafter provided." (Acts of 1901, chapter 491.)

The apportionment was made by the Metropolitan Parks Apportionment Commissioners of 1905, and they apportioned both the cost of construction and future maintenance as follows: —

	Per Cent.
Somerville,	12.50
Medford,	19.00
Malden,	14.00
Stoneham,	3.50
Reading,	1.00
Metropolitan Parks District,	50.00
	100.00

In assessing 50 per cent. upon the Metropolitan Parks District, the commissioners found that the benefits "are shared in equal proportion by those who use and will use the bridge for the ordinary highway purposes, and by those who use and will use it in connection with travel to and from important park reservations within the Metropolitan Parks District."

They found that "the cities of Somerville, Medford and Malden receive material benefit from the improved means of communication with each other, in the increased convenience for

mutual business relations between these communities, and, especially in the case of the two cities last named, a direct benefit in the probably larger value of lands at present unoccupied."

As to Stoneham and Reading, they found the value of the street railway facilities (of the then proposed street railway) "to the town of Stoneham, and in a smaller degree to the town of Reading, constitute in large part the basis for the finding that these towns are to receive special benefit from the new bridge."

In 1915 the Metropolitan Park Commission reconstructed that portion of Wellington Bridge which had been destroyed by fire, at an expense of about $115,000. The work was done under the provisions of the Acts of 1914, chapter 794, as amended by General Acts of 1915, chapter 276. The expenses are to be paid as follows: —

> Forty-two and one-half per cent shall be paid by the cities and towns, excepting the city of Boston, determined to be specially benefited by the use of said bridge for highway purposes in the manner hereinbelow provided; fifteen per cent by the Boston Elevated Railway Company or such other street railway company as shall have a location on said bridge as aforesaid; and forty-two and one-half per cent in the same manner as expenditures made from appropriations authorized to carry out the provisions of said chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four and acts in addition thereto and in amendment thereof.

The act then provides that this Commission "shall, after due notice and hearing, in such manner as they shall deem just and equitable, determine which of said cities and towns, excepting the city of Boston, are specially benefited by the use of said bridge for highway purposes, and to the extent of such benefit, and shall further determine in proportion to such benefits the part of the cost of the work herein provided for, together with any interest on any money borrowed, to be paid by each of said cities and towns," and in like manner shall determine "as to the payment by said cities and towns of the cost of maintenance of said bridge, and determine the proportion in which said cities and towns or any of them shall bear the same."

The expenses to be paid, "forty-two and one-half per cent by the cities and towns, excepting the city of Boston, determined to be specially benefited," etc. (section 4), are, as we construe the act, the expenses of *construction alone*. The *whole* expense of *maintenance* is to be borne by the "cities and towns specially

benefited by the use of the bridge for highway purposes." Maintenance means, as we construe the act, maintenance of the bridge as a whole, and not maintenance of the *reconstructed* part alone. It is hardly conceivable that the Legislature intended that the original maintenance apportionment of 1905 should continue in force as to a part of the bridge and that the new maintenance apportionment should cover the reconstructed part only, that is, that there should be two different maintenance apportionments. (The total maintenance expenditures for the ten years 1905–14, inclusive, amount to $57,674.97.) The "forty-two and one-half per cent [to be paid] in the same manner as expenditures made from appropriations authorized to carry out the provisions of said chapter two hundred and eighty-eight of the acts of the year eighteen hundred and ninety-four and acts in addition thereto and in amendment thereof" (known as the boulevard act) falls into the class of expenses to be apportioned by this Commission under the provisions of said act, and is apportioned in the same manner as all boulevard expenses.

This Commission, therefore, is required by said Acts of 1914 and 1915 to apportion the entire expense of maintenance of said bridge from June 1, 1915, and 42½ per cent. of the cost of construction, upon the cities and towns, excepting the city of Boston, determined by us to be specially benefited by the use of said bridge for highway purposes "in proportion to such benefits."

We have already referred to the report of the Apportionment Commissioners of 1905, which found that five cities and towns "were specially benefited by the use of said bridge for highway purposes." This Commission is to determine which cities and towns are "specially benefited by the use of said bridge for highway purposes." The words of the two statutes (Acts of 1901, chapter 491, and Acts of 1914, chapter 794) are identical. By the 1901 act, however, only those cities and towns in *Middlesex County* specially benefited were to be assessed. The same was true by the act as originally passed under which the present assessment is made. But by the amendment of 1915, the limitation to Middlesex County was stricken out. It was by the amendment of 1915 also that the city of Boston was excepted.

The towns found by the previous Apportionment Commission to be specially benefited have urged upon this Commission a finding that other cities and towns are also specially benefited by this bridge. The chief arguments addressed to us are: (1) The great change in the use of the bridge since the appor-

tionment of 1905 by the increase in the number of automobiles; and (2) that by striking out the limitation as to Middlesex County, the Legislature must have intended that the commissioners would include some municipalities not previously included.

The commissioners heard much evidence as to the use of the bridge, took views at different times, and had tables prepared from actual counts made of the vehicles crossing the bridge at different times. In the week of August 23 to 29, inclusive, between the hours of 7 A.M. and 9 P.M., 29,086 vehicles passed over the bridge, or an average of over 4,000 daily. Of these, about 27,000 were motor vehicles and about 2,000 horse-drawn vehicles. Of the motor vehicles, only about 2,000 were of foreign registration. These figures afford some idea of the *general* use of the bridge.

Another count was made of the vehicles passing over the bridge for the three days Saturday to Monday, September 11 to 13, inclusive. There were 13,339 automobiles and 807 motor trucks and teams. Of the latter, 199 were from Malden, 138 from Medford and 96 from Somerville, a total of 433 from these three cities, or more than half of the whole; 268 came from Boston and only 106 came from all the other cities and towns.

This count seems to afford a fair index as to the use of the bridge for business and commercial purposes by the several municipalities, and would indicate that Malden, Medford and Somerville were the cities specially benefited, and in the order named, by this use of the bridge.

As to the automobiles, the statistics taken would seem to show that a much smaller percentage of them came from these three cities, though Somerville would be first upon the list and Malden second. Medford would be fourth, as Everett had more automobiles than Medford, and several other cities, to wit, Brookline, Cambridge, Lynn and Melrose, had nearly as many as Medford.

The three cities of Malden, Medford and Somerville (the municipalities making the most use of the bridge for commercial purposes) urged upon the Commission to find that the other cities, like Everett, Brookline, Cambridge, Melrose and Lynn, from which automobiles came in numbers approximating the automobiles coming from said three cities, should also be found to be "specially benefited by the use of said bridge for highway purposes." It is to be borne in mind, however, that 42½ per cent. of the cost of construction is to be paid by the cities and towns constituting the Metropolitan Parks District in accordance with

the "boulevard" act. This is because the Legislature determined that the Metropolitan Parks District was benefited by the use of said bridge for park purposes to that extent. This provision of the statute leads us to the conclusion that in our determination of which of the cities and towns "are specially benefited by the use of said bridge for highway purposes" the use by automobiles should not be as controlling as the use of the bridge for commercial purposes.

We find that the cities of Somerville, Medford and Malden receive material benefit from the improved means of communicating with each other, and in the increased convenience for mutual business relations among these municipalities.

As to the relative "special benefits" to these three cities: If the use of the bridge by motor trucks and teams were the only controlling consideration, the order of assessment would be Malden, Medford and Somerville. So far as the use of the bridge by automobiles is a consideration, the order would be Somerville, Malden and Medford. Having regard, however, to the other considerations of proximity to the bridge, relative sizes of the cities, that Somerville is on the Boston side of the Mystic River, etc., we believe it to be just and equitable, and we find that these three cities are "specially benefited by the use of said bridge for highway purposes," and that in proportion to said benefits they shall pay toward the cost of construction—

	Per Cent.
Medford,	16
Malden,	13
Somerville,	11
	40

We find that Stoneham is "specially benefited by the use of said bridge for highway purposes" because of the street railway facilities afforded to that town. The Commission of 1905 made a similar finding as to Stoneham. Counsel for the town contended that such facilities ought not to be regarded as a "special benefit" under the provisions of this act, inasmuch as the street railway company is compelled to pay 15 per cent. of the cost of construction, a provision not found in the 1901 act. We are of opinion, however, that notwithstanding said provision of the statute as to payment by the street railway company, the town of Stoneham is somewhat "specially benefited by the use of said

bridge for highway purposes." We therefore believe it to be just and equitable, and we find that this town is "specially benefited by the use of said bridge for highway purposes," and that in proportion to said benefits it shall pay toward the cost of construction 2½ per cent.

We find that no other cities and towns except Medford, Malden, Somerville and Stoneham are "specially benefited by the use of said bridge for highway purposes."

The cost of reconstructing said bridge, therefore, "with all necessary alterations and repairs in said bridge, together with the cost of providing temporary bridge facilities during construction," is to be paid as follows: —

	Per Cent.
In the same manner as expenditures made from appropriations authorized to carry out the provisions of said chapter 288 of the Acts of the year 1894 and acts in addition thereto and in amendment thereof,	42½
Boston Elevated Railway Company,	15
Medford,	16
Malden,	13
Somerville,	11
Stoneham,	2½
	100

The cost of maintenance is to be apportioned as follows: —

	Per Cent.
Medford,	37.6471
Malden,	30.5882
Somerville,	25.8823
Stoneham,	5.8824
	100.0000

The construction apportionment and the maintenance apportionment among Medford, Malden, Somerville and Stoneham are in the same proportion.

The town of Weston made the following requests for rulings: —

1. That 21½ per cent., or any part thereof, of the said $115,000 of construction cost may be apportioned to the city of Boston as a constituent part of the Metropolitan Parks District, if such apportionment be just and equitable in the judgment of the commissioners.

2. That maintenance cost from the date of the appointment of these commissioners must be apportioned among those cities and towns, excepting Boston, which said cities and towns in the judgment of the commissioners receive special benefits from the use of the bridge for highway purposes.

Both the above rulings are given.

The city of Medford made the following requests for rulings: —

1. It is the duty of the Commission under the provisions of Acts of 1914, chapter 794, as amended by General Acts of 1915, chapter 276, to apportion among the towns and cities in the Commonwealth, exclusive of Boston, which are specially benefited by the use of Wellington Bridge for highway purposes, not only 42½ per cent. of the cost of rebuilding the bridge, including interest on money borrowed, but also cost of maintenance of the entire bridge as reconstructed.

2. The fact that Medford under the 1875 apportionment of the Middlesex County commissioners was obligated to pay one-half the cost of maintenance of the old Middlesex Avenue Bridge, which was removed when the Wellington Bridge was constructed, and the further fact that the apportionment made by the Apportionment Commission appointed pursuant to Acts of 1901, chapter 491, fixed the Medford share of the cost and maintenance of the Wellington Bridge at 19 per cent., are not elements of special benefit to the city of Medford, in the use of the bridge for highway purposes under the provision of Acts of 1914, chapter 794, as amended by General Acts of 1915, chapter 276, and no part of the cost of rebuilding or of maintenance of the bridge can legally be apportioned in the present proceedings to the city of Medford by reason of any supposed benefit arising from said facts.

3. In determining which of the towns and cities in the Commonwealth, exclusive of Boston, are specially benefited by the use of Wellington Bridge for highway purposes, if the Commission finds that certain towns and cities receive material benefit from improved means of communication with each other, or with other towns and cities in the Commonwealth, the Commission is legally required to determine that said towns and cities are specially benefited by the use of the bridge for highway purposes within the meaning of Acts of 1914, chapter 794, as amended by General Acts of 1915, chapter 276.

4. The substantial use of the bridge by the inhabitants of any city or town is a special benefit by the use of the bridge for highway purposes, within the meaning of the Acts of 1914, chapter 794, as amended by General Acts of 1915, chapter 276, which the Commission is legally required to take into account in determining what towns and cities in the Commonwealth, exclusive of Boston, are specially benefited by the use of the bridge for highway purposes.

5. In determining whether a substantial use of Wellington Bridge is

or will be made by the inhabitants of any municipality, use by the inhabitants in automobiles cannot legally be excluded.

6. That the use of Wellington Bridge by automobiles is an element of special benefit which the Commission is legally required to take into consideration in apportioning the cost of maintenance among various towns and cities specially benefited by the use of the bridge for highway purposes.

7. That if the use of the Wellington Bridge by automobiles is an element of special benefit, then and in that event the city of Everett and such other cities, districts and towns as the Commission shall find have made a substantial use of said bridge, have been and are specially benefited by the use of said bridge for highway purposes, must therefore be required to pay a proportionate part of the cost of reconstruction of said bridge and of the maintenance thereof, which this Commission is now required to apportion.

Rulings 2, 5 and 6 of the above are given; the others are refused.

ROBERT O. HARRIS.
GEORGE S. TAFT.
JAS. H. P. DYER.

AUG 15 1916